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Forum

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The Year of the Fly

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Editorial panel

Dipterists Forum Officers

Ordinary Members

Unelected Members

Secretary

Jane Hewitt
Birch Barn, New Mills Rd., Birch Vale, High Peak, Derbyshire, SK22 1BT
jane.e.hewitt@gmail.com

Treasurer

Phil Brighton helophilus@hotmail.co.uk
32 Wadeson Way, Croft, Warrington, WA3 7JS

Deposits for DF organised field meetings to be sent to the Treasurer

Conservation

Robert Wolton (interim contact, whilst the post remains vacant)
Locks Park Farm, Hatherleigh, Oakhampton, Devon EX20 3LZ
Tel. 01837 810416
robertwolton@yahoo.co.uk

Publicity

Erica McAlister
e.mcalister@nhm.ac.uk

Training

Matt Harrow
matt.harrow@hotmail.com

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Membership Secretary

John Showers
103, Desborough Road, Rothwell, Kettering, Northamptonshire NN14 6JQ
Showersjohn@gmail.com

to whom all enquiries regarding delivery of this Bulletin should be addressed

Meetings

Please use the Booking Form downloadable from our website

Field Meetings

Now organised by several different contributors, contact the **Secretary**.

Workshops & Indoor Meetings Organiser

Martin Drake martindrake2@gmail.com

Bulletin contributions

Please refer to guide notes in this Bulletin (or online) for details of how to contribute and send your material to **both** of the following:

Dipterists Bulletin Editor

Darwyn Sumner Darwyn.sumner@ntlworld.com
122, Link Road, Anstey, Charnwood, Leicestershire LE7 7BX.
Tel. 0116 212 5075

Assistant Editor

Judy Webb judy.webb@virgin.net
2 Dorchester Court, Blenheim Road, Kidlington, Oxon. OX5 2JT.
Tel. 01865 377487

Dipterists Digest contributions

Dipterists Digest Editor

Peter Chandler chandgnats@aol.com
606B Berryfield Lane, Melksham, Wilts SN12 6EL Tel. 01225-708339

Recording Scheme Organisers

Listed on the back page of this Bulletin.
Biological Records Centre also lists all schemes at www.brc.ac.uk

Websites

Dipterists Forum Website www.dipterists.org.uk
Manager: Martin Harvey kitenetter@googlemail.com
Dipterists Forum Forum www.dipteristsforum.org.uk/index.php
Manager: Chris Raper chris.raper@tachinidae.org.uk

Photographs: Front cover *Lucilia bufonivora*, **Ian Andrews**, above *Loxocera aristata*, **Malcolm Storey**
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BULLETIN OF THE
Dipterists
Forum

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Please consult the Dipterists Forum websites for latest details of events.

Other items such as full details of training and workshops and our Membership form may be downloaded from Dipterists Forum website or by contacting the organiser. Online membership is now available on our newer website.

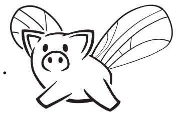
A Booking form for meetings can be downloaded at https://tinyurl.com/y9u3pc44

The following Newsletters and other special items are incorporated into the package for the printers after completion of the Bulletin. They have their own pagination. Please contact the Newsletter editors for full colour pdfs, back issues may also be found on the DF website.

Anthomyiidae Newsletter #11 (6pp)
Agromyzidae Newsletter #11 (8pp) abridged
Hoverfly Newsletter #65 (18pp)
Soldierflies Newsletter #6 (6pp)
For Events List see our Websites
Back issues of Dipterist Forum Bulletin at https://tinyurl.com/ycjwuxtd
Access to all links in this Bulletin at https://tinyurl.com/yahsa8l3

Desktop publishing: Darwyn Sumner

The Year of the Fly and of the Pig
anything could happen ...



Editorial

Museum collections enquiry

The Natural Science Collections Association (NatSCa) has launched an appeal for information regarding natural history collections (see http://www.natsca.org/NHNearYou). This is a crowdsourced initiative so the more people who check it out the more comprehensive it becomes. I used their map to check my home town, they seem to all be there, the collection of the Microscopical & Natural History Society, that of Gallery Oldham and one in a visitor centre nearby. How good is their list where you live?

Awards

Winners of the fourth annual awards, made jointly by **National Biodiversity Network**, NFBR and BRC, for Biological Recording and Information Sharing were announced recently. The David Robertson adult award was made to Bryony Chapman for marine work in Kent, Trevor James (whom we know for his role as National Schemes and Societies officer for the NBN back in the days when that post existed) got the Gilbert White Adult award for work on taxonomy and biogeography of beetles and plants. The Gilbert White Youth award went to Mya-Rose Craig for terrestrial and freshwater work (birding, bioblitzing and mothing.) Numerous other awards were made at Nottingham, there's one to honour the late John Sawyer, the Open Data Award which was made to The Wildlife Trusts.

The NBN conference is a marvellous opportunity to meet people across the whole of the network.

The NBN's Newsletter is well worth a read, in the latest one we also have news of the publication of the SBIF review and an account by Buglife's Craig Macadam.

https://nbn.org.uk/news-events-publications/latest-stories-from-our-network/

Fly Times

Three new issues since our last Bulletin. Two of them are supplements and will appeal to readers who love stories about famous dipterists of the past. To tempt you here's a quote:

More than twenty years too late for his scientific reputation, and after having done an amount of injury to entomology almost inconceivable in its immensity, Francis Walker has passed from among us." (Carrington, 1874: 140). The Entomologist's Monthly Magazine published that! Read more in Fly Times' September Supplement. Their November Supplement is an account and index of all previous Fly Times so it's a "must-have" if you collect their newsletters.

Issue 61 has some interesting accounts. There's an article on Drosophilidae, seems North America also has problems with *Drosophila suzukii*, one on collecting Mycetophilidae and another on Asilidae prey.

Grants

Towards the end of Fly Times #61 is notice of a Smithsonian Institution fund, the **S.W.Williston Diptera Research Fund** which has been used to support the travel of dipterists to the International Congress of Dipterology (amongst other things). Deadlines are in December so if you fancy a crack at that one it will be for the 2020 ICD.

Closer to home, the British Entomological & Natural History Society also administer grants. Detailed at http://www.benhs.org.uk/about/grants/ , the **Professor Hering Memorial Research Fund** which is for the promotion of entomological research, has particular emphasis on leaf miners and the Diptera families Tephritidae & Agromyzidae. Peter Chandler tells me that last year the BENHS Research Grant Committee awarded Barry Warrington £500 from the Hering Memorial Fund for the study of Agromyzidae. A second fund the **Maitland Emmet BENHS Fund** (less Diptera oriented) provided awards/funds to Dawn Painter for illustration work on Muscidae (for a key in an upcoming handbook) and Mikhail Kozlov for work on the Eriocraniidae (Lepidoptera) of north-eastern Russia. Closing dates for the current round was 1st December so again you will not be able to enjoy the fruits of those until 2020. These grants have been available since 1969.

Martin Harvey also responded to my enquiries about grants, he'd compiled a list of potential grants a little time ago, these include the **British Ecological Society** (https://www.britishecologicalsociety.org/funding/), **Field Studies Council** bursaries (https://www.field-studies-council.org/individuals-and-families/bursary-information.aspx) and **Royal Entomological Society** (https://www.royensoc.co.uk/awards-grants)

And of course **Dipterists Forum** also offer bursaries for attendance at our Preston Montford courses. The deadline this year passed without any applicants.

European tree database

Deep within the European Commission's **Joint Research Centre database** is an exceedingly useful resource on trees. At "Forest", https://tinyurl.com/gm67xjn you are able to select any European tree species and get a very detailed account:

Fagus sylvatica in Europe: distribution, habitat, usage and threats

T. Houston Durrant, D. de Rigo, G. Caudullo

Fagus sylvatica L., or European beech, is one of the most important and widespread broadleaved trees in Europe. It is a large deciduous tree that can maintain its high growth rate until late maturity. Its natural range extends from southern Scandinavia to Sicily, from Spain in the west to northwest Turkey in the east. Though not demanding of soil type, beech requires a humid atmosphere with precipitation well distributed throughout the year and a well-drained soil. It tolerates rigorous winter cold, but is sensitive to spring frost. Owing to the capacity of its root system for assisting in the circulation of air throughout the soil, and the amount of potash in its leaves, Beech trees conserve the productive capacity of the soil better than many other species. Its wood is strong and wears well making it ideal for a wide range of uses, from furniture to musical instruments, as well as for pulp and firewood.

If you want to find some nice saproxylic diptera, how about a holiday on the beech in Romania?

Darwyn Sumner

Beginners

Mentor Scheme

It is safe to say that pursuing the study of Diptera with no assistance can be quite the challenge. A first stop would be acquiring A Dipterist's Handbook (P.J. Chandler, 2010) or of course a read through the new Dipterists Forum website, but what to do down the line when faced with the dilema of deciding if the "Dorsal margin of anterior process of postgonite [is] almost straight near tip". Sometimes all it takes is a helping hand from someone who has done the rounds with a net and pooter. A concept we would like to encourage between the DF members is of such guidance from those with experience, being offered to not only beginners but to anyone along the learning path. This idea of mentorship can be as intensive or relaxed as the mentor wishes (with a professional conduct expected from both parties) and may include any number of actions including email correspondence, time out in the field, specimen verification and guidance, 1:1 microscope sessions, visits to local collections, or anything else that may deem beneficial!

Contact Matt Harrow (matt.harrow@hotmail.com)

Beginners Corner?

It is now 7 years since I joined the Dipterists Forum, and the Bulletin editor has been kind enough to accept several of my articles, and you elected me as a member of the Committee, and I am even managing data for one of the recording schemes. But I still feel I am a beginner. It may be that I am very near the end of the beginning, but there still seems a very long way to go even in understanding the common diptera fauna of my local region. The Dipterists Bulletin comes twice a year with accounts of elusive species and scenic locations: I have seldom seen any of the former, and the latter seem rather unlike the urban edge-lands and agricultural deserts in my immediate locality.

I imagine that readers of the Bulletin are likely to have a good grasp of hoverflies and will be going about with nets catching things to kill somehow, and then sticking pins through them to look at under the microscope. Of course, even getting that far is quite a leap from a general interest in natural history and recording, or even from recording insects via digital photography and on-line groups which have made such a big contribution to the hoverfly recording scheme recently: but there are just 280 or so species of these, or 4% of the British total number of diptera species.

There is no apostrophe in my title, but not because I am not a greengrocer. This article is a beginner's corner in which I report some findings before continuing my further journey, but I hope it will start off a regular Beginners' Corner feature to provide mutual help along the way. We need some beginners' introductions to taxonomic nomenclature, both what names mean and why they seem to change so often, to genitalia examination (do you really need a chemical laboratory for this?), breeding out of larvae, even to organising one's own records as the number of available methods increases year by year – all things I have painfully and slowly reached a barely adequate grasp of. I also think it might help to have a list of 100 common species and a bit of lore about each of them: in my own area, I have found that 100 species, across quite a wide range of families, constitute over 50% of my records even though they are just 1.4% of the total UK species list, and I think getting to know these is an important first step beyond the confines of hoverfly-land. More about that below, but first some thoughts are in order about what we are collectively trying to achieve.

The **Lancashire and Cheshire Entomological Society** has recently digitised and published on the internet (https://tinyurl.com/y8yqltnl) the full series of its Annual Report and Proceedings, also known in its later years as the society's Journal. In 1905 the Vice-President's address was given by the eminent myrmecologist and coleopterist Horace St J K Donisthorpe, F.Z.S., F.E.S. It included the following preamble (he went on to talk about the myrmecophilous coleoptera of Great Britain):

> I should like to take this opportunity to exhort entomologists to study their insects from a scientific point of view, though perhaps it is unnecessary to say this to such a useful and "go-ahead" society as the one I have the honour to address. Not merely to collect insects with the sole object of amassing a collection, as this is reducing our study to the level of stamp collecting, and is what caused Huxley to call us the camp followers of science: but to use our collections for the benefit of entomology. Do not let it be thought for a moment that I am speaking against collecting itself, as I consider field work absolutely essential if we are to know anything really about the creatures themselves, as the dry dead body of a beetle on a pin, or card, can tell us little of its habits unless we have seen it in life in its natural environment. It is astonishing how little is known of the life history of many of our commonest Insects. I think that we should collect with a special object, and it does not matter whether it is the geographical distribution, or life history of a species, or even the compiling of a local list we are working at, so long as we do it thoroughly and systematically. Then there are the theories of mimicry and protective resemblance, the courtships of insects, the scents they bear to attract the other sex, and to repel their enemies, and many other equally delightful problems which give boundless scope to the researches of a scientific entomologist. I have heard it said that there are too many theories about, and that we want to wait for more material; but it seems to me that if we go on waiting we shall never advance our study at all. The faculty of imagination is just as essential to a scientific man as it is to a literary one, and without the use of this gift very little real advance in the propounding of the great theories and the great principles upon which entomological science is now grounded would ever have been made. Darwin's work and reputation are a proof of the value of the imaginative faculty to a naturalist. There are immense masses of material to hand, the Museums are full of thousands of described species, and hundreds and hundreds of undescribed ones, and the number keeps increasing; and if we are to do nothing but describe their bodies (a line of study which is, of course, very necessary in its place), we shall never progress with the true science of entomology.

This exhortation seems just as apt in the age of DNA sequencing and computerised recording! Today we might add the whole field of ecology and conservation science as our sphere of interest. But if you are just starting out you just have to see where things take you for a year or two, what works or doesn't work for you, whether you feel one line of approach is starting to be more fruitful than the others. It will also depend on what resources of time you have and you will want to define your field of enquiry accordingly. In previous editions of this Bulletin I have reported on how I discovered that I was following in the footsteps of various eminent entomologists based at Manchester and other Museums in the North-west, most notably Harry Britten (1870-1954), Leonard Kidd (1920-2013) and Allan Brindle (1915-2001), and my project has extended to updating and even extending their account of the distribution and ecology of the diptera of Lancashire and Cheshire published in 1959. What have been the changes over the past half-century? How can we evaluate the value of the residual natural habitats and newly created or reclaimed nature reserves for the fly fauna?

To try to find some answers to these questions, I have had the advantage of six years of full retirement in which I have on average managed 100-200 records a week based on visits to a wide range of localities within an hour's reach. I can collect enough from a day's progress around a reasonably-sized nature reserve to occupy 3 or 4 days' identification during the rest of the week. Given the number of weeks in the collecting season from March to October, I should have not been surprised, though I was, to find that I have now accumulated over seventeen thousand records comprising 1221 diptera species.

I've grouped my records into five broad categories broadly reflecting a gradual expansion over the families I been able to tackle:

- Craneflies (350 British species) – families Tipulidae, Limoniidae, Pediciidae, Cylindrotomidae, Ptychopteridae and Trichoceridae
- Hoverflies (282 British species) – family Syrphidae
- Superfamily Empidoidea (701 British species)
- The Calyptrate division of the sub-order Cyclorrhapha (1055 species)
- Other Diptera not included above (5055 species)

The first three of these categories correspond to 3 of the most popular DF recording schemes, and so are relatively well supported by identification keys and other material. This has also become increasingly true of the fourth category, the bristly ones such as houseflies and bluebottles. Fonseca's key to Muscidae and Fanniidae was a natural progression from his one for the Dolichopodidae – both are freely downloadable from the website of the Royal Entomological Society. In just the last few years, accessible keys have also become available to members of DF for most of the other families in this group. The final group of other diptera includes some very distinctive groups or families such as the Soldierflies and Allies, Conopidae, Sepsidae, Sciomyzidae, and Tephritidae, all covered by active recording schemes. But the following major families are almost completely beyond my scope:

Mycetophilidae	Fungus gnats	493
Sciaridae	Black fungus gnats	267
Cecidomyiidae	Gall midges	653
Psychodidae	Owlet-midges or Mothflies	100
Ceratopogonidae	Biting midges	172
Chironomidae	Non-biting midges	625
Phoridae	Scuttleflies	356
Agromyzidae	Leaf-miner flies	400
Chloropidae	No common name	177
TOTAL no of British species		3243

So, after accounting for other smaller families, I can claim to be potentially recording only half the diptera species. Nevertheless that half does include most of the medium and large species that I come across in what I call a "happy-go-lucky" approach: going around with a fairly robust net sweeping quite deeply into any promising vegetation that is not brambles or gorse, not forgetting trees and bushes, and also sampling other micro-habitats such as bare mud.

This Table shows in very broad terms what I have found.

Group		Numbers	% of British Species
Craneflies	Records	2732	
	Species	177	50.6
Hoverflies	Records	2639	
	Species	118	41.8
Empidoidea	Records	3228	
	Species	247	35.2
Calyptrates	Records	4317	
	Species	351	33.3
Other Diptera	Records	4136	
	Species	328	6.5
TOTALS	Records	17052	
	Species	1221	16.4

It is quite interesting that the numbers of records are fairly even across the groups. It may be that the craneflies and hoverflies will lag further behind in future as these were the groups I took up first. Here, "a record" means that I found the species in a particular 100m square on a particular day, no matter whether 1 or 20 specimens. Species may score highly on this measure by being very widespread in many habitats for a few weeks or common at a lower level for most of the year. On a typical day's survey, I might collect a pooter-full from 12 different squares, plus odd records of ones sitting on flowers, leaves or fence-posts that I can catch in a pot or can identify straight away – I have never managed to develop that elegant flick of the wrist that seems to be the mark of skilled field dipterists. I believe these figures give a realistic picture of the relative abundance in the different groups.

Thanks to "Pivot Tables" in the Excel spreadsheet (this is a tip I picked up early on from a passing remark), it is quite a simple matter to look at the relative numbers of different species. This is what I have found.

	Records of Top 20 as proportion of total	No of species with only one record	...as proportion of number of species
Craneflies	56.7%	39	22.0%
Hoverflies	71.9%	24	20.3%
Empidoidea	51.3%	58	23.5%
Calyptrates	41.2%	85	24.2%
Other Diptera	49.0%	89	27.1%
	Records of Top 100 as proportion of total		
Overall	52.2%	295	24.2%

I think the distribution across species is fascinating: just 10% of the species account for over 50% of my records; and a quarter of species make up only 2% of all the records. The top one of all is *Scathophaga stercoraria*, the common yellow dung-fly with 362 records. But nearly a quarter are represented by a single record, in many cases a single specimen. It's not that these are all officially scarce or rare species. Is it significant that this figure is fairly constant across the groups? Are these singletons really representative of the habitat they are found in, or chance encounters with a wind-borne migrants and vagrants?

If I can keep going on as long as Harry Britten did, I might be able to quadruple my total number of records and get repeat observations of many of my singletons – there is after all an inherent limit in the total number of possible species. But I am beginning to suspect that the 10:50 and 2:24 percentage ratios will not change very much. Are these the result of the fundamental nature of competition and evolution amongst all our diptera species? Or are these proportions also influenced by methods of collection and sampling? I suspect that if we could count all the actual individuals present in a given square on a different day, the disparities in numbers of different species would be even greater.

I hope that to some extent I am fulfilling Horace Donisthorpe's exhortation to be scientific rather than just a collector, whether of specimens or records. I also hope this shows the importance of recording the common species – most of my top hundred have become monotonously familiar, though careful examination in the microscope is almost always necessary to distinguish them from very similar species. Having these species recorded systematically provides a firm baseline for assessing the overall amount of recording done, and thus the significance of the rarer finds, and for monitoring in the future, whether by myself or others.

I hope to publish in future Bulletins the top twenty in each of my five categories as an indication of what beginners might expect to find on starting each of these groups. This should help them to find their way into the keys of the more difficult groups and not to be surprised how many supposedly common species they don't find.

As noted above this is only one aspect of what a Beginners' Corner might contain, and I hope others will be inspired to contribute on other topics. I also hope that there might be some future articles in the Bulletin or Digest on the range of very common species and their relative numbers in other parts on the country.

Phil Brighton: Warrington (VC59)

Recording

Sharing biological records

Recording schemes play a vital role in collating, checking and sharing data about species. Everything we know about species distributions and trends comes from people all round the country sharing their information. There are many complexities to how this is done, and many views on how it should be done. This report gives a brief overview of how data can be shared and how the Biological Records Centre (BRC) can, if you wish, help in these processes.

Most records initially go to National Recording Schemes/Societies (NSS), and/or to Local Environmental Records Centres (LERCs). Most NSS share data with BRC, who can provide secure back-up and support for data management, help with atlas production, and may also be able to support recording scheme websites and other projects such as digitising records. In return, the data is made available for use in research, both at BRC and through other academic bodies. NSS are acknowledged and consulted over research uses.

Data can also be shared publicly via the National Biodiversity Network (NBN), through their Atlas websites. BRC encourages recording schemes to make their data available via NBN where possible. Routes for data to flow to the NBN can be direct from the NSS, or direct from a LERC, or direct from a particular project (such as the DF field meetings), or BRC can manage the export process on behalf of recording schemes.

For those NSS that are using the iRecord online recording system there are additional possibilities. Records on iRecord become available to schemes and to LERCs as soon as they arrive on iRecord. Some schemes go on to download the iRecord data and incorporate it into their own databases, and may send it on to NBN from there.

Other schemes are now taking advantage of the automated export process that iRecord offers, whereby schemes can arrange for BRC to forward data from iRecord to NBN on a monthly basis. This is currently being done for soldierflies, sepsids, anthomyiids and calliphorids. Schemes can choose what sort of licence the data appears under.

There are many options in all this, and nothing is compulsory! The Dipterists Forum *Bulletin* provides regular updates about the progress being made. Sharing data means that it becomes available for use for a wide range of conservation and research purposes: to take just two examples, recording scheme data has been analysed for use within the "State of Nature" reports and the government's Biodiversity Indicators, as well as in many research papers. Records are also available to LERCs via iRecord and the NBN, where they can contribute to planning decisions and mapping of local wildlife sites. Although the number of organisations involved can make the situation seem complex, it has never been easier to share data, and help is available from BRC if needed.

For the individual recorder, the message remains that the first priority is to send your records in via whichever route is recommended by the schemes or projects that you are recording for.

Martin Harvey (from his AGM presentation)

Science is not about tools. It is about how we use them, and what we find out when we do - Edsger W. Dijkstra

Recorder 6

What method do you use to record your Diptera observations and how do you share them? According to the survey conducted by ALERC of users who work on species databases, 90% consider Recorder 6 as their main database. Thus if you are in the habit of sending your records to a recording scheme, that's what they are relying upon to collate and manage all the incoming information. Fortunately those data managers include a lot of Local Environmental Records Centres who rely upon it to conduct their "business" and when government funding to maintain Recorder 6 was withdrawn, they set up a consortium to ensure its continued support. Hence the consultation and survey, the results of which you can view at https://tinyurl.com/ycdmqtcf

Phase one of that continued support bridged the gap between JNCC's withdrawal of funding and March next year (thanks in part to one very generous individual donation.) Phase two begins in April 2019 with the consortium as the following letter indicates:

New support arrangements for Recorder 6 from April 2019, including annual licence fee (6/11/18)

Dear Recorder 6 user,

I am happy to report that we now have a plan to ensure continued maintenance and development of Recorder 6.

This will need to be funded through the introduction of an annual licence fee from April 2019, which for 2019/20 will be set at £25 for individuals and £250 for organisations – in line the average 'willingness-to-pay' expressed in responses to the Recorder 6 consultation. We are hoping to be ready to take payments by February 2019 (so if it suits some organisations to pay out of this year's underspend, they can). The licence fee will need to be reviewed, when we have a clearer view on the number of users paying the licence fee and better understanding of development costs.

Paying the licence fee will give users access to dictionary updates and new releases. Users can continue to use the software without paying the licence fee – it will still work. But you will need to pay the licence fee if you want to get the updates.

For more information about plans for new Recorder 6 support and management arrangements, please see my post on the NBN Forum: https://forums.nbn.org.uk/viewtopic.php?id=7293

I hope this plan will meet with support from Recorder 6 users – if you have any comments or concerns please do share them via the NBN Forum.

Many thanks to the Recorder 6 working group, Recorder 6 Consortium and everyone who responded to the consultation – your contributions have all been very valuable in getting us to this point.

Best wishes,

Clare Blencowe, Chair of the Association of Local Environmental Record Centres and Manager of Sussex Biodiversity Record Centre

(*You've me to thank in part for that relatively low individual fee, I did a lot of grumbling about unwaged individuals during the consultation - Ed.*)

Many thanks to Clare and the ALERC R6 Consortium for organising all this for us.

Recorder 6 is one of the many tools we may use for biological recording, nine of our Recording Schemes use it. Check the back page of this Bulletin for a list of the methods that each scheme prefers, they will all take in records from pretty much any format. Your Local Environmental Records Centre (http://www.alerc.org.uk/) is also a very good place to get advice on recording methods.

Darwyn Sumner

Recording Schemes

BRC Meeting with Recording Schemes

All Recording Schemes (not just the Diptera ones) have been invited by BRC to a meeting at CEH Wallingford on 23rd March. Topics will include data quality, data use and tools to support recording schemes. No details yet but I'd hope to learn more about the NHM's Scratchpads and FSC's Identikit. Progress with "record level verification" on the NBN Atlas must surely be made in 2019. Several Dipterists Forum scheme organisers will be there, we'll report back after the meeting.

An **additional meeting**, specifically for Diptera recording scheme organisers, is currently being planned, and is likely to take place in April.

Both will include discussion of how we can best encourage and support the collation, verification, sharing and conservation/ research use of your Diptera records

Darwyn Sumner & Martin Harvey

Anthomyiidae Study Group

Newsletter #11 included in this Bulletin

Phil Brighton (helophilus@hotmail.co.uk)

Soldierflies Recording Scheme

Newsletter #6 included in this Bulletin

Martin Harvey

Hoverfly Recording Scheme

Newsletter #65 included in this Bulletin.

David Iliff

Agromyzidae Newsletter

Newsletter #11 included in this Bulletin.

Barry Warrington

Stilt & Stalk Fly Recording Scheme

New Scratchpad at http://micropezids.myspecies.info/ as European Micropezids & Tanypezids. The site is beginning to take shape, contributions very welcome.

Darwyn Sumner

Heleomyzid Study Group - NEW

Scoliocentra villosa [Ian Andrews]

The UK has 56 species within the Heleomyzidae and 4 species within the Trixoscelididae (previously considered within the Heleomyzidae). Like many others, I suspect, I have collected Heleomyzids occasionally over the years and then sometimes found it far from simple to find up to date keys and more information to help me deal with the specimens. There is certainly some work on them going on among a small number of dipterists, but there is currently no illustrated key, and reliable photos on the web are very few indeed to help with confirming an ID. In spite of the lack of readily available information, over the last couple of years I have collected them a little more assiduously, mainly around carrion and by sweeping in woodland, and my interest in the spiny-winged ones has increased. It surprises me that they have been rather neglected, as they can be found year round and many *Suillia*, for example, are medium-sized, rather striking species. Some, like *Scoliocentra villosa*, are really quite attractive, while they lead interesting lives around fungi, animal burrows, caves, on carrion and so on. There is certainly much to interest a dipterist among the family and the numbers involved are very manageable.

Following on from my recent interest, I am keen to start up a study group for the sharing of information, with a view to setting up a recording scheme in a year or two's time. To that end, I would welcome any discussion of Heleomyzids and Trixoscelids. Please contact me via e-mail on the address below. In addition, and importantly for me, I would be very interested in receiving any specimens to help me build up my study collection. While I am not starting up a recording scheme immediately, I would still be interested in receiving records now in order to get an insight into distribution, so please do send me through any records you have…ideally as an Excel spreadsheet. They can later be entered into a recording scheme.

Ian Andrews (syrphus@hotmail.co.uk)
24 Barmby Road, Pocklington, YO42 2DP

Cranefly Recording Scheme

There is insufficient copy for an issue of Cranefly News, so hopefully Issue #35 will be out in Autumn 2019.

We have had an extreme Summer in 2018 and it would be interesting during 2019 to monitor the effects of the hot dry weather at sites where the cranefly assemblage is well known. Some sites on well-drained sandy soil or on limestone may be especially vulnerable. Some species will be able to aestivate, but others at a vulnerable stage in their life cycle may well be eliminated. Perhaps aquatic larvae would be most vulnerable to drought, unless they can survive deep in the mud.

A New British Gonomyia ?

Geoff Hancock was working through some specimens when he came across and unusual Gonomyia from Loch Ailort, captured on 4 July 1992. Unfortunately the aedeagus is broken (See photo taken by Geoff.) but the part that remains is distinctly different from the currently known British species. If you have any specimens to identify it would be a good idea to look out for this one, especially from the Loch Ailort area of the west coast of Scotland. (NM7379.VC 97, West Inverness-shire).

2018 Records: Please send any outstanding records to Peter Boardman (pete.ento22@gmail.com) The Cranefly Recording Scheme Twitter account is: @CRStipula

Very best wishes for the 2019 season.

John Kramer

Taxonomy

Taxonomist E.O.Wilson bemoaned the shortage of taxonomists worldwide (~6,000)[3] back in 2004. Attempts to address that problem in the UK resulted in a review, summarised by the following:

> "On-line identification facilities are in demand by users of taxonomy. New approaches, such as **scratchpads**, have been developed that provide user-friendly technology enabling taxonomists to get their work onto the web with minimum expense and *maximum functionality*. The rate limiting step is finding experts able and willing to generate web-based identification systems. This is exactly the same situation as for hardcopy keys, guides and handbooks - successful handbook/identification key series, such as those published by the Linnean Society and the Royal Entomological Society, are unable to find authors, as noted by the House of Lords Inquiry. This is not a technology problem: it is a shortage of available expertise problem."

1. Boxshall, P. G., & Self, D. (2011). UK Taxonomy & Systematics Review - 2010. The Natural History Museum, 1–37.

Scratchpads

Developed with the aid of a European Union FP7 funded project starting in December 2010 and completed in November 2013 by the Natural History Museum, Dipterists Bulletin readers will no doubt by now be familiar with Scratchpad implementations by Stuart Ball of the Scathophagidae and Iain MacGowan's Lonchaeidae and there's another on Sarcophagidae at http://sarcophagidae.myspecies.info/.

The big Scratchpad for dipterists of course is **The new Diptera Site** (http://diptera.myspecies.info/) which is connected to the *Systema Dipterorum* initiative by Chris Thompson, Neal Evenhuis & Tom Pape.

Scratchpads provide a range of very useful facilities, there's a brochure to be had about them at https://tinyurl.com/ltmjp4c and Laurence Livermore of NHM wrote a piece about them in the NFBR Newsletter back in 2014 (https://tinyurl.com/ya35yfxv) A handful of other Recording Schemes have had a stab at it and maybe not progressed far, it can be quite frustrating.

By the time I'd organised enough material from my recording scheme the NHM had closed it down for new applicants. I located Ben Scott there who told me they had been working on various issues to improve the system and finally, in December it was up and running again and after a few teething problems I succeeded in making progress despite the frequent and continuing performance problems with their servers. First impressions are that the system is extremely focussed on taxonomy and not so much on identification. Many aspects of biogeography[2], phenology and recording are under-represented in the design of its template.

That *maximum functionality* desired by Boxshall[1] will require tools and expertise from many disciplines and Wilson's *global biodiversity maps*[3] won't appear by magic, we naturalists are doing that.

FSC Identikit

In the meantime I recalled a couple of presentations that Rich Burkmar had made regarding identification systems. He'd demonstrated one at a Leicestershire Recorders meeting a couple of years back. I recollect asking him if such a key could be incorporated into one's own websites, it seems that was the plan all along.

This has now become a Field Studies Centre Biodiversity Project, called the FSC Identikit (https://tinyurl.com/y7k3mu9w), a nice example of it in use for Harvestmen, incorporated into its own little website, is at https://harvestmen.fscbiodiversity.uk/

Anyone can do their own now, just download the files, change the objects of study from biscuits to a group of flies and build one that works on your own desktop. Though the end-product is very different there are elements in common with Scratchpads. The Identikit methodology is a lot easier, if you can manage Excel files, simple text editors and can get the Google Chrome Web Server up and running then you've got it. A real server uses the internet and files that have been uploaded there, this one runs on your desktop from files on your computer. It's really easy once you've done it once and the beauty is that there's no need to worry about perfecting it so that it can be uploaded to the internet, just use the system to assemble fact files on a group of flies which interest you and sprinkle in the best photographs & diagrams you can find. Add the characters that turn it into a key afterwards - if you wish.

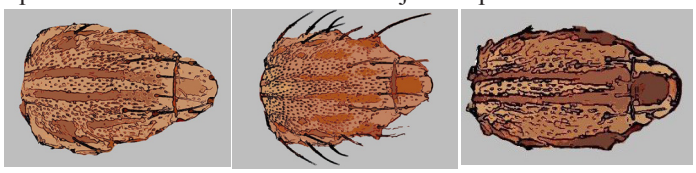
Once perfected you could, of course, upload your project to the internet for all to access, FSC can help with that. In the meantime you've got a very useful identification system on your own computer and on your colleagues' if you share.

The following Diptera projects have been started:

Identikit project 1. Tetanocera

Prompted by a discussion (https://tinyurl.com/y9wyzulc) regarding the possibility of identifying *Tetanocera* species (Sciomyzidae) from photographs, I had a crack at it. Just for this one genus and just using typical field photographs from a wide range of sources such as Diptera.info, Malcolm Storey's Bioimages and Steve Falk's Flickr.

Although there's potential in this pictorial system for using the colour of live specimens as a character, lighting and cameras produce a lot of variation so colour just helps a little:



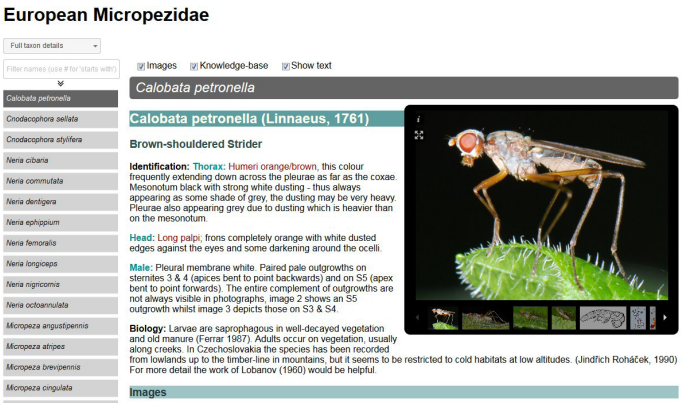
T. elata *T. ferruginea* *T. punctifrons*

The majority of live specimens conform to one of the above colour patterns. Generally beige, but surely "ferruginea" means "rusty". Steve Falk calls them all "buff".

Contact me if you want the files for this project. Bear in mind that it is experimental.

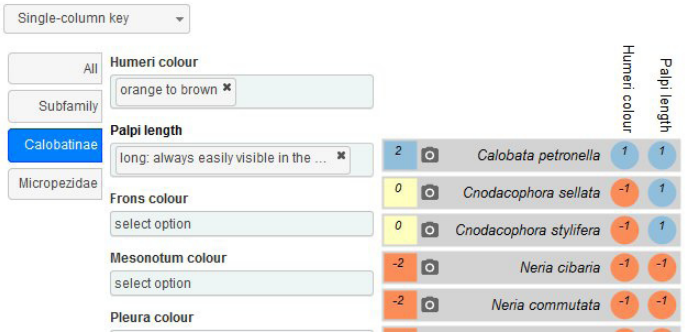
Identikit projects 2. Micropezidae & 3. Psilidae

Using what I had learned from the *Tetanocera* project I began work on groups from my Recording Scheme. With so many different keys in so many languages (mainly Russian, German & French) and a number of useful images posted on various sites, I began by just assembling summaries:



The upper part of a summary page from an FSC Identikit as it would appear in your browser. It begins with key features discernable from photographs.

There's a good deal of interest in making identifications from photographs (e.g. iRecord, iSpot). Some groups can be readily identified this way whilst others require critical microscopic work. The system of verification through iRecord relies upon knowing which species can and which cannot be identified this way. The FSC Identikit works very well on photographs as it is not a binomial system. By simply selecting the feature which can be seen, the list of possibilities begins to narrow:



It has even got a built-in probability factoring for each character you choose. Once narrowed down, identification characters on the summary page help to confirm the identification. If it can't be done from photographs, you'll need the specimen and the usual schematic illustrations of terminalia etc., plenty of work here for illustrators.

So far my efforts on groups in my Recording Scheme have proved very effective for photographs of Micropezidae, Chyliza & Loxocerini.

To set about building one of your own, begin to gather together all the images you can of identified material, don't forget to add the author's name and the url source to the metadata of photographs, you will need it at some point.

Many thanks to Michael Woods, Geoff Foale, Nigel Gilligan and Malcolm Storey for their help with the *Tetanocera* Identikit project.

Impressions

The Scratchpads are of considerable value, almost a *vade mecum* of all the species in a Recording Scheme complete with as many facts as you care to add. Kaj Winquist tells me that the Scathophagidae one was invaluable when the Finnish Diptera checklist was being developed. You'll need to be fairly well organised with your material before you begin, start with a few images, spreadsheet of all the species names (complete with authors and vernacular names) and a well organised literature list that you can easily export to BibTex format (use Mendeley.) After that it's just a matter of adding pictures, descriptions and downloadable files such as your keys, atlases & newsletters.

An FSC Identikit project however, can be developed at your leisure and shared with colleagues until you have a fair key. You can also use this to organise other information (later to be fed into a Scratchpad site perhaps), things like descriptions, images and, of course, keys.

The two systems aren't integrated, though it would be nice to be able to put FSC Identikit keys onto an identification page on a Scratchpad. Though Scratchpad's image handling leaves much to be desired, both systems are well worth pursuing. **Both are collaborative systems so if you've something to contribute then contact their organisers.**

In response to Martin & Malcolm's question about "stumbling blocks" in the next article, the ones I've encountered in working on the above have been those associated with translation, illustration & copyright, material and time. The same issues as experienced by those working towards print publications but with these online tools, useful elements of your work are available before it's perfected.

2. Franklin, J. (2009). Mapping species distributions: spatial inference and prediction. Landscape Ecology Journal of Vegetation Science, 336.
3. Wilson, E. O. (2004). Taxonomy as a fundamental discipline. Phil. Trans. R. Soc. Lond., B(359), 739. http://doi.org/10.1098/rstb.2003.1440

Darwyn Sumner

Keys to the British Diptera in preparation

Malcolm Smart and I put a request in Bulletin 85 for information on work being done on new keys to our fauna. This was part of the action needed to take forward Dipterists Forum's initiative to make more keys available, as Rob Wolton mentioned in his Chairman's Round-up in Bulletin 84, p8. We had several responses, although fewer than match the work we know has been going on.

Keys that are well under way and whose authors intend to publish are Duncan Sivell and Alan Stubbs on **Heleomyzidae** (*and Ian Andrews - see his new scheme - Ed*) and a few related families, and Olga Sivell on **Calliphoridae**. I am working on **Dolichopodidae** but after three years am about only half-way through the task. Mike Hackston's keys to several groups are available on-line but Mike does not intend going into print with these (https://sites.google.com/site/mikesinsectkeys/). There are several on-line picture galleries which don't really fall within the scope of our inquiry, but Malcolm Storey tells us that he is working on a photographic guide to **Tephritidae** as well as contributing Diptera images on www.bioImages.org.uk. He says that the tephritid 'atlas' is going rather slowly and would welcome live or nearly live (!) specimens to photograph. We also know through the grapevine that James McGill is making good progress on **Muscidae**, John Ismay has more to come on **Chloropidae**, and Alan Stubbs's **craneflies** are in the pipeline.

We were particularly interested in what the stumbling blocks were to getting into press. While no-one mentioned anything in particular, the subtext is lack of time, or conversely, that producing good well illustrated keys takes a lot of time. A better understanding of the issues people face may be helpful. A big step towards help in writing and structuring keys will be covered by the forthcoming workshop on key-writing by Tony Irwin and Martin Ebejer.

Our next step is a resumé of what is available versus what is desirable. This will build on Alan Stubbs's (2003) *Starter Pack*. The gaps in what is available may prompt someone to take up the challenge.

Martin Drake & Malcolm Smart

Stomoxys calcitrans - the stable fly [Ian Andrews]

Conservation

UK Pollinator Monitoring Scheme – update

The UK Pollinator Monitoring Scheme (PoMS) completed a second year of field work in 2018. Many thanks to the many volunteers who assisted with pan-trapping across a set of 1km-square systematic samples, and to those who completed a ten-minute Flower-Insect Timed Count (FIT Count) during the year. Results from the first two years are being analysed, and a PoMS newsletter is now available to download from the project website at www.ceh.ac.uk/pollinator-monitoring.

From the pan-trap samples all insects are identified into main taxonomic groups and counted, with all trapped hoverflies and bees being identified to species level, the results of which will be shared with the Hoverfly Recording Scheme and BWARS respectively.

At the time of writing plans for 2019 are yet to be confirmed, but if you would like to find out more about volunteering for PoMS please see the website link given above, or contact poms@ceh.ac.uk

PoMS is co-ordinated by the Centre for Ecology & Hydrology (CEH). In 2017–18 it was jointly funded by Defra, the Welsh and Scottish Governments, JNCC and project partners, including CEH, the Bumblebee Conservation Trust, Butterfly Conservation, British Trust for Ornithology, Hymettus, the University of Reading and University of Leeds.

Martin Harvey

News from the acting Conservation officer

Status reviews

Natural England published two new Diptera status reviews in 2018:

DRAKE, C.M. 2018. *A review of the status of the Dolichopodidae flies of Great Britain - Species Status No.30*. Natural England Commissioned Reports, Number 195.

CHANDLER, P.J. 2017. *A review of the status of the Lonchopteridae, Platypezidae and Opetiidae flies of Great Britain - Species Status No.34*. Natural England Commissioned Reports, Number 246.

In line with others in the series, these reviews contain a wealth of information, not just on distribution, etc, but also on habitats, ecology and conservation, and should be standard reference works. Congratulations to Martin Drake and Peter Chandler for writing them, and to David Heaver as Natural England Project Manager. Both reports can be downloaded online – visit Natural England's publications pages.

UK BAP & **Adopt a species**

News from fly guardians

Judy Webb: Here in the South East (Oxfordshire), after last year's late wet spring followed by heat and drought that was not relieved until well into the autumn, it is time to think of management that can help the species for which I am fly guardian. With fast moving climate change upon us, it may be that such heat and drought experienced recently will be the norm in 2019 and getting worse thereafter. Such climate change may interact with other recent phenomena such as the wave of new tree diseases that have impacted woodlands over the last few years.

***Milichia ludens* (Milichiidae)**

This small black fly breeds in the nests of the Jet Ant *Lasius fuliginosus* inside the 'carton' nest of chewed wood (similar to a wasp's nest) that the ants construct inside hollow trees, usually in the base. Obviously the fly depends on the ant colony being healthy. The worker ants forage out from the nest tree to locate insect food such as caterpillars and they harvest honeydew from aphids that they specifically locate on growing shoot tips of plants nearby. These aphids are taken into the nest for care all winter and brought out again in the spring. In Cothill fen SSSI/SAC, the Jet Ant nest I study is in the base of an old ash tree and the worker trails from it radiate out over drier fen margins. One trail leads to a young oak with extensive growth of ivy up the trunk. Here the ants have a colony of aphids on the ivy growing shoots which they tend for the honeydew. As part of the fen restoration management some of the fen marginal trees are being removed, to reduce shading and to encourage back light-demanding flowery fen meadow flora. I have marked this small oak specifically to indicate it needs to stay to support the ant's energy needs, which of course benefits *Milichia*. But there is another problem. The ash tree which hosts the Jet Ant nest has signs of Ash Dieback disease (like all the ash trees in the locality). It is very tall and will die in the future. As it overshadows the area where volunteers regularly cut and rake the fen margins, it cannot be left as a standing dead tree, which could fall unpredictably in its own time. In any case, past experience has shown that letting Jet Ant occupied trees fall usually results in the death of the colony from exposure of the carton nest to the elements. This happens because the hollow base where the carton nest is formed makes a very weak hollow area where breakage is most likely to occur. In an urban situation in Milham Ford Nature Park in Oxford some years ago a Jet Ant nest with *Milichia* existed in the hollow base of a dying Lombardy poplar on the margin of the park. Autumn gales blew the tree over and the carton nest in its base was exposed. By the time I had visited and noticed this, local vandals had dragged out the carton nest and set fire to it on the field. Even if they had not destroyed the nest, I doubt it would have survived winter freezing temperatures. In this case, luckily the Jet Ants had already set up home in a nearby Lombardy poplar that was not quite so decayed, so they were not lost from the site. I have been unable to confirm that *Milichia* survived along with them at this site.

The Ash tree with Jet Ant nest in base is the large tree to the right of the photo. All other ash trees in background have already been removed to restore fen meadow. 6th April 2012. Photo: Judy Webb

So how to avoid the Jet Ant nest dying in the ash tree in Cothill Fen? I'm negotiating with Natural England site managers for a 'managed retreat' i.e. to firstly carry out a high pollard at say 4m, leaving a very high stump on the tree but removing tons of dead-wood and the dying canopy. This should leave the tall monolith and stump base with the ant colony safe for a good few years. The monolith can then be reduced in height as deemed necessary in future years to finally leave a 1m high stump which presents no hazards to anyone. This kind of successful cooperation with site managers is the ideal when dealing with a sensitive fly species dependent on a complex situation involving dependence on another invertebrate and good deadwood management. Without specialist knowledge of the presence of the Jet Ants and *Milichia ludens* living with them, normal fen restoration (which would benefit many other invertebrates of warm sunny short fen) would have meant the complete clearance of this important ash tree. Of course increasing heat and drought in the summer months may impact the survival of the Jet Ant colony and *Milichia ludens*. Already the fly was on the wing much earlier than in other years: 21st April, this being the earliest I have ever seen it. It does not seem to need to visit flowers for nectar as do some other milichiids. Heat and drought may mean a decline of food source for the ants – the general decline of insects plus reduced honeydew output in heat are two possible reasons that come to mind.

***Triogma trisulcata* (Cylindrotomatid cranefly), and *Odontomyia argentata* Silver Colonel, *Stratiomys chamaeleon*, Clubbed General Soldierfly and *Odontomyia angulata* Orange-horned Green Colonel Soldierfly (all Stratiomyidae).**

I have lumped these species together as they all depend on fen wetland or fen pools for successful breeding as they have aquatic/amphibious larvae. Soldier flies also seem to depend as adults on nearby nectar-rich flowers (particularly umbellifers like hogweed and wild parsnip).

The prolonged heat and drought of this last summer in the south will have been bad news for larvae of all wetland species if drying down of shallow pools has been extensive and complete. This was the situation for some important breeding pools in Cothill Fen. Larvae vary in their ability to survive such episodes. Some larger soldierfly larvae of *Stratiomys* species have particularly tough leathery outer skins which must restrict water loss and they are reputed to survive in just damp mud, reviving once rain returns. Even if this happens, the prolonged dry conditions here in Oxon will have meant that they will have lost a couple of months of successful feeding (they are detritivores, feeding underwater using their mouth brushes to sweep up bacteria and unicellular algae or consuming sloppy mud). The large *Stratiomys* species seem to need several years of such feeding to get big enough for metamorphosis to adult flies. At the best, frequent droughts such as recently experienced may significantly delay the life cycle, so that more years are needed to build up sufficient food reserves for the emergence as an adult. The situation will have been worse for flies with very delicate soft bodied larvae that cannot stand any degree of drying out (such as *Triogma*). I remember all too well Alan Stubbs telling me about the effect of the 1976 drought on the cranefly fauna in a particular area he had studied. It took 10 years for the fauna to recover and even then there was not complete recovery.

In the NNR section of Cothill Fen it is lucky that log dams were installed by volunteers into the outflow drain in July to restrict clean water loss and keep water levels high throughout the site, especially in the pools and runnels. This worked well through all the worst of summer drought in August and September with no loss of watery fly breeding habitat. The Odonata loved it as well, with very high numbers of our rather special small red damselflies. Similar mitigation by damming up drains and restricting drainage of clean water offsite is just getting going in other parts of the SSSI, so hopefully the whole site should be more resilient next year if a similar hot and dry summer happens.

Log dam going into the outflow stream at Cothill NNR/Ruskin Reserve to retain clean water on site in fen pools and runnels. 21st July 2018. Photo: Judy Webb

The central pool (originally an old peat cut) at Cothill NNR has had a lot of volunteer work to reduce and remove the tall reed which had taken over and almost eliminated all open water. The open water can warm up next spring and I look forward to seeing how popular this area is now for flies.

View South across the centre of the Cothill NNR fen pool that has had dense reed removed. Note good water level despite drought. 29th October 2018. Photo: Judy Webb

The nitrate pollution mitigation scheme at Cothill (mentioned in my spring and autumn account 2018) to clean up polluted water from agriculture entering the fen has been on-going with groups of volunteers working with the Local Wildlife Trust (BBOWT) and Natural England. The mitigation involves directing nitrate-polluted water through an area of anaerobic waterlogged rotting vegetation to encourage de-nitrification, thus cleaning up the water (anaerobic bacterial activity on nitrate means N is returned to the air as nitrogen gas). Cut reed and rush generated by fen management has been used to form the rotting vegetation and has been placed in the ditches with high nitrate. Water testing below such intervention showed that this worked well to reduce nitrate all summer and into the autumn, but that it failed as soon as the

first frosts occurred and temperatures were probably too low for bacterial action to remove the nitrate. I will report more fully on the success of this after a full year of such works and water testing, which will be completed in April 2019

The Freshwater Habitats Trust citizen science test kits showing nitrate polluted water (bright pink – more than 10ppm nitrate) above the mitigation and the low nitrate water (clear tube) from below the mitigation. Volunteers in the background forking cuttings into the water filled polluted ditch to denitrify the water. Cothill Fen NNR/Ruskin Reserve. 7th September 2018. Photo: Judy Webb

The new Oxfordshire Fens Project is going well, hosted by the Freshwater Habitats Trust. Already one LWS alkaline fen not far from Cothill has had extensive tall reed cutting and raking and tree removal. Several important tufa-forming springs have been opened up and will be kept short by volunteer scything next year. The aim of this is to restore important alkaline fens that are declining due to lack of the traditional management of grazing or cutting. Returning such overgrown reed- or tree-dominated fens to short turf with warm shallow pools will benefit many plant and invertebrate species, especially perhaps some of the rare soldier flies such as those discussed here. *Stratiomys* species are large flies that are strong fliers. It is a hope that they may be able to find these newly opened up fens as they disperse from the central important breeding area of Cothill Fen and Dry Sandford Pit.

Judy Webb

Fancy-legged Fly *Campsicnemus magius* Martin Drake

This is a BAP dolichopodid with a very narrow habitat range, restricted to brackish marsh and usually well behind upper saltmarsh (Drake, C.M. 2015. Distribution and ecology of *Campsicnemus magius* (Loew) (Diptera, Dolichopodidae). *Empidid and Dolichopodid Newsletter* **20**, 6-8.). Nearly all records are from the Kent and Essex marshes but there is a confirmed record of a single female from the lagoons on the River Weaver, Mersey estuary, collected by Richard Underwood in 2003, and this is the only known reliable record for the west side of Britain. On the Dipterists Forum summer field meeting, I found a male at the inland 'saltmarsh' at Anderton Nature Park, near Northwich in Cheshire (SJ662747, 27 vi 2018), about 15km inland from Richard's record at the nearest bit of coastline. This is useful confirmation of the population on the Mersey and highlights the importance of these inland saltmarshes.

Broads Dolly-Fly *Dolichopus laticola* and Black-footed Dolly-Fly *Dolichopus nigripes*

Readers of Dipterists Digest will have noted that Martin Drake has published the results of his detailed research on the habitat preferences of these two rare BAP flies. Drake, C.M. 2018. Habitat associations of the rare flies *Dolichopus laticola* and *D. nigripes* (Diptera, Dolichopididae) in the fens of Norfolk, England. *Dipterists Digest* **25**, 35-52.

Martin Drake

Phoenix Fly *Dorycera graminum*, by Roger Morris

On 25 May last year (2018) I came across an aggregation of males and females of *D. graminum* in rank mesotrophic grassland on the clay capping of a former rubbish dump. I counted at least six (males and females) but there were probably more. This suggests that *D. graminum* might form localised 'leks'. The only previous time that I encountered this species was at St Mary's Island Recreation Ground, Chatham (also an artificial mound) on 18 June 2015, from around hawthorn scrub adjacent to short mown grassland. On that occasion I encountered four females all in the same sweep of the net. These two encounters give little clue to the preferred habitat and are so different that it is difficult to be sure what the fly's habitat requirements are.

The Phoenix Fly. Photo Steven Falk.

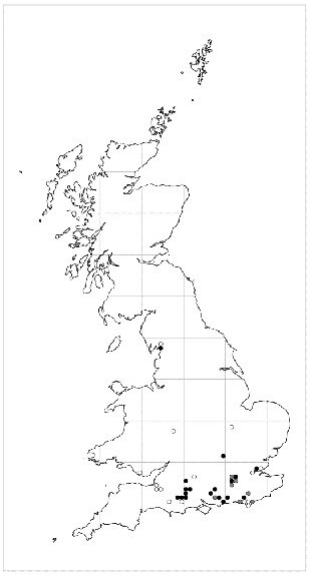
Golden Hoverfly *Callicera spinolae* and Phantom Hoverfly *Doros profuges*, by Roger Morris

The recent increase in photographic recording has meant that several of our rarer and more spectacular hoverflies have been recorded more regularly. In part, this is because known sites have been visited specifically to find some species; whilst more intensive recording elsewhere has generated records from new sites. Records for 2018 have yet to be added to the database, so the maps produced here reflect the situation up until 2017. *Callicera spinolae* and *Doros profuges* have been recorded in successive years since 2015 and populations of both appear to be at least stable and possibly expanding.

The evidence for range expansion of *C. spinolae* is more compelling, with recent records from the London area and West Sussex suggesting that it has escaped from its traditional East Anglian

stronghold. In 2018, it was reported by several observers on a succession of dates from the RSPB's Sandy headquarters; in numbers that suggest a very healthy population. This reserve is currently the only location in the UK to boast all three *Callicera* species!

Doros profuges has been reported in slightly greater numbers than *C. spinolae* and the map suggests that it is still to be found in most of its traditional haunts. Importantly, there have been several visits to Yealand Allotment that eventually led to success. One record that does not appear on the map involved an individual photographed when it landed on a small boat about a mile off the Sussex coast! What on earth it was doing there? Is *Doros* really a migrant? It is certainly possible, but the frequency of records from certain sites over several years/decades suggests that it is resident. The overall spread of records also points away from this being a migrant, especially as most records are from Chalk or Limestone.

Callicera spinolae	*Doros profuges*
	

The Golden Hoverfly [Simon Knott]

The Hairy Canary *Phaonia jaroschewskii*

Further to Ian Andrew's review in the last edition of the Bulletin of places where this fly is known to occur, and of the habitats it uses, Steven Falk remarks he has recently found a really healthy population at Sutton Park, North Birmingham, mostly in wet woodland and carr within wet, peaty valley mire. He comments that he thinks he's seen the species at about eight sites now, in three counties, so it's clearly not as rare as once thought!

Roger Morris

Hoverfly havens in the Cairngorms, by Iain MacGowan and Gabrielle Flinn

The Pine Hoverfly *Blera fallax*

This was the first breeding season during which the new, larger, stump holes were available at the main site - ready for egg-laying females. Perhaps due to the large volume of water which they contained, and the well-fitting lids, they maintained water levels well during the hot dry weather which even Strathspey experienced during the summer of 2018. When the local volunteers, organised by Gabrielle Flinn of the Rare Invertebrates in the Cairngorms project (RIC), undertook the annual larval surveys during the Autumn we were all pleasantly surprised as 60 larvae were found, the highest figure for several years. No larvae were found at the other former sites, including the RSPB owned Abernethy Forest where 2 larvae were found in 2017. This perhaps indicates the need for larger stump holes at these sites to improve the chances of establishing sustainable populations. More stump rot holes are being created by the Forestry Commission in two sites within Strathspey and there are ongoing discussions about making this kind of habitat enhancement a more standard occurrence.

Steven Falk, the last individual to have found an adult in Britain, came up to the Cairngorms this summer and spent the week training volunteers and surveying key sites across the national park. Unfortunately, despite the efforts of Steven and the RIC team, no adults were spotted this summer – making it the sixth consecutive year the marvellous adults have eluded us!

Athayde Tonhasca, Iain MacGowan and Steven Falk, Cairngorms. Photo Gabrielle Flinn

The Pine & Aspen hoverfly steering group met in September and the decision was taken to remove half of the larvae from the main site and place them in the new breeding facility at the Highland Wildlife Park under the care of the Royal Zoological Society of Scotland (RZSS). The intention is to establish a captive breeding population in order to greatly increase the number of larvae which will be available for further translocation projects. This will attempt to repeat the earlier successful captive breeding carried out by Ellie Rotheray some years ago and we greatly appreciate Ellie's continuing support for the project and the invaluable advice she has provided. We are also indebted to the RZSS for providing the facilities at the Wildlife Park and the staff who will be involved in the captive breeding project.

As part of the work ongoing for this species, Gabrielle Flinn, Ben Harrower (Royal Zoological Society Scotland) and James Silvey (RSPB) went to Sweden to meet Swedish partners Norden's Ark. In Sweden, the *Blera* population is thought to be in a healthier state due to higher forest cover. As such, Norden's Ark have been able to find the species in wild 'natural' rot holes in the stumps of trees. In Sweden, the species' common name is stump hoverfly indicating that this is a common place for their discovery. During the week in Sweden, Jimmy Helgesson guided the team to stumps he suspected to have suitable rot holes and they ended up finding ten pine hoverfly larvae altogether. These larvae were all found in Norwegian spruce stumps – a tree native to Scandinavia which might explain the difference in habitat choice. The Scottish team were taught about naturally occurring larval habitat and Gabrielle passed on *Blera* identification skills as previously the Swedish team were sending all larvae found. It was a great knowledge exchange and the ten found were brought back to be part of the captive rearing programme and for potential genetic testing.

Examining a pine stump rot hole for Pine Hoverfly larvae. Photo Gabrielle Flinn

The project was recently featured on the BBC Countryfile programme (available on iPlayer) where attention focussed on the use of volunteers who carry out the vital larval monitoring.

We look forward to 2019 with some anticipation. This multi partner project is now starting to look forward to having both sufficient larvae available and increased management knowledge, to allow us successfully to establish further secure populations in publicly or NGO owned forests within Strathspey.

The Pine Hoverfly. Photo Iain MacGowan

The Aspen Hoverfly *Hammerschmidtia ferruginea*

As in previous years, monitoring of the key sites was carried out by volunteers to identify the number of large aspen trees which had fallen over the winter and will provide future habitat for *Hammerschmidtia* larvae. The results indicated that there was no shortage of suitable timber at present. The Pine & Aspen hoverfly steering group considered the proposal to restock *Hammerschmidtia* into the aspen stands in Deeside using larvae from Strathspey and it was agreed that this should go ahead if all relevant permissions could be obtained. *Hammerschmidtia* was last recorded in the area as a single larva in the early 1990's but despite regular further survey work it has not been seen since. Preparatory visits to the largest aspen stand in Deeside have proved to be encouraging with a large amount of suitable wood being currently available and a substantial amount available for future management if required. Plans are being developed for this restocking to take place in the spring of 2019.

Roger Morris

Fonseca's seed fly *Botanophila fonsecai*, Buglife

The International Union for the Conservation of Nature (IUCN) has published a global assessment for Fonseca's seed fly which found the species to be globally Endangered. The classification is the second most severe category in the internationally adopted system and is used for species that are likely to become extinct if current threats to their survival are not removed or avoided. Fonseca's seed fly is found on a short stretch of coast in northern Scotland and nowhere else in the world. It lives on the fragile dune systems that line the coast between Dornoch and Loch Fleet where it is thought to depend on plants such as ragwort and sow-thistles. As Bulletin readers will know, the sand dune system at Dornoch (Coul Links) is currently threatened by a golf course development. Following the decision by Highland Council to grant planning consent and subsequent uproar by conservation bodies, the Scottish Government has decided there should be public inquiry, and a date has been set – the 26 February 2019. We must hope that the inspectors recommend the planning application is refused.

Robert Wolton

Acting Conservation Officer

Regional groups

Devon Fly Group

The unusual weather of 2018 had an instant impact on our activities of the year with the indoor meeting at Woodah Farm being rescheduled twice due to heavy snow dumped on us by 'The Beast From the East'. As always, this regular fixture at the beginning of our year was an enjoyable success. A discussion on the courtship behaviour of Dolichopodidae was presented by Martin Drake using some entertaining video clips. Richard Lane demonstrated his practical techniques for rearing diptera prior to Rob Wolton discussing his studies on colour dimorphism in the hoverfly, Microdon myrmicae. Other topics included local museum collections, suggestions for places to visit and artificial rot holes before this was all rounded off with the second annual DFG Fly Bingo contest in which the first prize was won by Geoff Foale.

Watersmeet [Andrew Cunningham]

The woodlands and East Lyn River at Watersmeet in North Devon provided a picturesque setting for our first field meeting in April. It was an ideal spring day with sunshine taking the edge off a slight chill in the wind. Fly numbers recorded on the day were low but that encouraged us to tackle the smaller stuff resulting in ten species of Sphaeroceridae including the nationally scarce *Spelobia cambrica*. The small Limoniidae cranefly, *Molophilus czizeki* was another highlight of the day. As mentioned in the last cranefly newsletter, Watersmeet is the only Devon site where it was previously recorded in 1997 by Adrian Plant. The day was rounded off with tea, cake and banter at the popular riverside tea rooms where a few members of the public were fascinated enough by our nets, etc. to strike up a brief discussion about diptera. The word was being spread!

The ecologically rich shifting ecosystem of the East Devon undercliffs between Axmouth and Lyme Regis, including Goat Island, was our venue for the May meeting and it obliged in spades. A few members caught the rare Limoniid cranefly, *Dicranomyia lackschewitzi* demonstrating the presence of a healthy population alongside the rarer *D. goritiensis* which we already knew of. A couple of tachinids stand out, these are *Ceromya bicolor* and *Solieria pacifica*. Thanks to Mike Ackland's excellent Anthomyiidae keys, this family can be tackled with a measure of confidence and today's efforts produced *Botanophila laterella*, *B. phrenione* & *B. varicolor*. A few other notables include the small yet unusual *Phyllomyza flavitarsis* (Milichiidae), *Kowarzia tenella* (Empididae) and *Sarcophaga pumilla* supported by two uncommon bees, *Andrena bucephala* & *A. fulvago*.

Another high quality location and habitat was our venue for the third field meeting in June, this was our second visit to Braunton Burrows on the north Devon coast. We also included two coastal grazing marsh fields adjacent to the Burrows courtesy of Natural England. A good number of people turned up and the weather cooperated for most of the day save for a short heavy shower sending us into the shelter of the trees and bushes at lunch time. As expected, Braunton Burrows amply rewarded our efforts starting with *Botanophila sonchi*, an Anthomyiid not previously known to us from Devon. Quite a few nationally scarce Dolichopodidae were found including *Campsicnemus pusillus*, *Sciapus laetus*, *Dolichopus acuticornis*, *D. notatus* and *Syntormon mikii*. Two species of Rhamphomyia topped the list of Empididae in terms of rarity, namely, *R. caliginosa* and *R. lamellata*. Sarcophagidae are always a pleasure to catch and identify and more so here where rarer ones are highly likely and it proved so with both *Metopia staegeri* and *Sarcophaga sinuata*. Quite a few picture winged flies were swept but the finest was the RDB1 species, *Campiglossa malaris* swept from the pasture fields. Another species not recorded often in the south west is *Fannia umbratica*, so this was another good record alongside *Herina palustris* (Ulidiidae), *Trachysiphonella ruficeps* (Chloropidae) and *Platypalpus melancholicus* (Hybotidae).

Whiddon Deer Park lies below Castle Drogo on the edge of Dartmoor and is an interesting site with a large number of ancient trees as well as the River Teign. Our July field meeting was held here jointly with the entomology section of The Devonshire Association. Keith Alexander led a small party into the woods on higher ground to study the ancient trees. The dry summer was kicking in by now with water becoming scarce but sweep netting over whatever water we could find running across the sloping woodland's footpaths produced lots of small black jobs, mainly Sphaeroceridae. This piqued the interest of a few members of the Devonshire Association, so some people were given a valuable insight into the study of diptera. After a lunchtime regrouping at the makeshift car park, a few people ventured to the River Teign since there would be a decent amount of water there and this boosted the species tally. Some of the larger jewels found during the day were *Dinera carinifrons*, *Thelaira solivaga* (Tachinidae), *Zaphne caudata* (Anthomyiidae), *Ravinia pernix* (Sarcophagidae), *Spaziphora hydromyzina* (Scathophagidae) and *Spanochaeta dorsalis* (Muscidae). The smaller species recorded included several Dolichopodidae and Empididae namely, *Gymnopternus angustifrons*, *Diaphorus oculatus*, *Lamprochromus bifasciatus*, *Syntormon sulcipes*, *Neurigona pallida*, *Syntormon silvianus*, *Xanthochlorus galbanus*, *Chelipoda vocatoria*, *Hilara nigrina*, *H. obscura* and *H. rejecta* as well as *Amiota basdeni* (Dosophilidae) and *Odinia boletina* (Odiniidae). Unsurprisingly, considering the presence of ancient trees and plenty of rotting wood, *Clusia tigrina* was found too. Craneflies were hard to come by due to the dry conditions but still included *Diogma glabrata* and *Pilaria fuscipennis*. It was good to have enthusiasts of other orders present including Martin Luff who discussed beetles from rotting wood, Bob Heckford & Stella Beaven helping out with micro moths as well as Keith enthusiastically expounding the value of old trees and wood pasture.

The first day of August saw a hastily arranged return visit to Langaford Farm on the eastern edge of Dartmoor. As mentioned in last year's report, Langford Farm contains a rich combination of Rhôs pasture, wet woodland and a few ponds with botanically rich margins. Considering this meeting was organised at the last minute and was a midweek arrangement, there was a just select few members present. We made a good job of finding good stuff as well as enjoying ourselves despite the continuation of the exceptionally dry summer. A stream on the edge of the reserve still had a trickle of water and we focussed on this to eke out as much as we could. We didn't find the hoped for *Mallota cimbiciformis* but there were two scarce hoverflies found, *Anasimyia lunulata* and *Xylota xanthocnema*. The Sciomyzid, *Euthycera fumigata* was a nice record as were *Anthomyza elbergi* (Anthomyzidae), *Zaphne ambigua*, *Botanophila brunneilinea* (both Anthomyiidae) and *Lasiosina herpini* (Chloropidae). Some of the better records from the superfamily empidoidea, were *Xanthochlorus galbanus*, *X. ornatus*, *Dolichopus phaeopus*, *Chelifera stigmatica* and *Drapetis simulans*.

King John Oak at Shute Deer Park [Andrew Cunningham]

A second meeting in August combined two adjacent venues in East Devon, Pennyhayes Farm near Umborne, and Shute Deer Park. Both sites contain a wealth of ancient trees including the famous 800 year old King John Oak within the private grounds of Shute Deer Park. As expected, with the continuing parched conditions, diptera numbers were low but there were a few good records. A distinctive tachinid fly, *Catharosia pygmaea* was a new record for Devon and, at least two were found which surely shows the presence of a resident population. A rare muscid, *Coenosia pudorosa* which forms part of a list of Devon's top 100 species of concern across all plant, fungi and animal taxa, terrestrial and marine, was found at Pennyhayes. There was also a nice record of a rhinophorid, *Melanophora roralis*. Some of the choice species under the umbrella of Empidoidea included *Diaphorus oculatus*, *Dolichopus virgultorum*, *Medetera dendrobaena*, *M. impigra*, *Rhaphium brevicorne* and *Teuchophorus nigricosta*. One non diptera species worth a mention was a Red Data Book bee found at Pennyhayes, *Sphecodes scabricollis* which is a parasitoid of *Lasioglossum zonulum* (also found here). The King John Oak provided a fitting spot to have lunch and an opportunity to inspect a rare fungus, *Fuscoporia wahlbergii*.

For the September field meeting, we explored three woodlands along the River Avon near Loddiswell in the delightful South Hams, Woodleigh Wood, Titcombe Wood and Aveton Wood. Nothing truly exceptional was discovered but it was a productive day in terms of collating records. The mines of *Liriomyza pascuum* (Agromyzidae) in Wood Spurge (*Euphorbia amygdaloides*) was a good find with not many records from Devon as far as we are aware. The tachinid fly, *Zaira cinerea* is another one we do not come across very often. One hoverfly stood out on the day, *Pipiza austriaca* which a few of us have not seen before. Of the craneflies it was good to come across some noteworthy Limoniidae including *Achyrolimonia decemmaculata, Ilisia occoecata and Pilaria fuscipennis*. There were a few more significant species such as *Minettia filia, Suillia imberbis, Drosophila suzukii, Geomyza balachowskyi, Syntormon bicolorellus and Argyra ilonae*. One easily recognised yet always appreciated fly was the chunky tachinid, *Phasia pusilla*.

Unbeknown to us at the time, that was our last meeting of the year as the weather conspired against us in October where we planned to visit Sticklepath on the edge of Dartmoor. At least, this gave us time to make inroads into identifying our samples. As mentioned in previous reports, membership of the Devon Fly Group is open to anyone by way of joining our Yahoo Newsgroup This platform distributes details of field meetings, events and other items of interest. Many people visit Devon so, if you happen to be one of them, then you are perfectly welcome to join one of our field meetings. All being well weather-wise, our indoor meeting for 2019 is due to be held at Woodah Farm on Saturday 2nd March 2019. Do join us if you can!

Andrew Cunningham ajc321@hotmail.com

Northants Diptera Group

Since the last report I have received further records from Alan Stubbs and Peter Chandler for the Dipterists Forum Spring 2017 Field Meeting at Yardley Chase MoD. These included 83 new species of fungus gnats and two new Drosophilids.

The group continued weekly meetings into September. The dry conditions continued and results from most sites were rather poor. However, I have quite a lot of specimens still to identify and I have not yet received reports from all participants.

We revisited two sites that had been subjects of bioblitzes earlier in the season to add some Autumn species. At Fineshade Woods at the beginning of November a specimen of *Dryomyza flaveola* was swept from a shady gully. Fineshade Woods had been the subject of a planning application to build a number of holiday chalets and had been vigorously opposed by many local people as well as naturalists. The surveys here were to support a campaign to show the wildlife value of the wood. Fortunately the application was defeated and the developers have decided not to pursue it further. However we shall continue to record flies here.

Alan Stubbs told me of a promising site of alder carr next to the River Nene and fed by some springs. Despite the dry conditions we found a number of interesting species that are uncommon in the area. Theses included the craneflies *Dicranophragma miniscula, Molophilus bihamatus* and *Ellipteroides lateralis* as well as the soldierfly *Oxycera nigricornis* and the hoverfly *Sphegina elegans.*

The parkland at Castle Ashby contains some fine trees and a couple had active sap runs. In a horse chestnut *Brachyopa insensilis* was found whilst, almost next to this tree, a beech yielded *Brachyopa scutellaris* and *Brachypalpoides lentus.* The latter was investigating a root rot hole.

The Northants Biodiversity Records Centre is continuing its WILDside project next year. This is aimed at encouraging more people to get involved in wildlife recording. The Diptera Group will be supporting this with talks, workshops and recording events. It will also be an opportunity to promote the Year of the Fly.

John Showers

Yardley Chase Training Area - July 2019

There is a wildlife recording event at Yardley Chase Training Area in Northamptonshire from 29/06/19 to 06/07/19. Yardley Chase Training Area is incredibly biodiverse. Many activities that will be taking place.

We are hoping to put into the field some of the best recorders available from as diverse wildlife groups as possible. It would also be good to help the next generation of wildlife recorders if that can be arranged.

Organisational considerations

The site is a working military base, so visitors can only join in by prior arrangements.

Visitors will need to have suitable insurance cover for surveying/recording/foraying activities. Most groups/clubs/societies have this organised and so it will be best for people to take part through association with wildlife groups/clubs/societies or education establishments. All activities will be in groups following appropriate health and safety rules. Biosecurity will need to be of utmost importance when inviting people onto the site from a range of different interest groups.

If you are interested, please contact:

Jeff Blincow (jblincow@hotmail.com)

Upland Diptera Recording Group

The first Upland Diptera Recording Group trip to the Brecon Beacons, was snowed off, emphasizing the difficulty of scheduling events in the mountains that rely on good weather. The second trip to Aran Fawddwy was more fortunate, falling in the middle of the heat wave. The final trip of 2018 to the Carneddau was beset by poor weather and the late season but still resulted in a respectable number of records. Across the two trips 67 species of Diptera were recorded as well as a number of other insects.

Trip reports 2018

Aran Fawddwy (SH8622) - 6th - 8th July 2018 - Matt Harrow and Sam Thomas

A successful trip in fine weather with 41 species of Diptera recorded. This included three uncommon or rarely recorded Anthomyiidae namely: *Alliopsis conifrons*, *Delia fabricii* and *Paregle atrisquama*. Other species associated with the uplands included the hoverflies *Platycheirus ramsarensis* and *Sericomyia silentis*. Summiting behaviour of male Diptera and Hymenoptera was observed around the peak of Aran Fawddwy with woodland species including the uncommon *Sarcophaga agnata* as well as *Tabanus sudeticus* and *Paykullia maculata*. Other invertebrates recorded on the trip included large numbers of summiting males of the giant wood-wasp (*Urocerus gigas*). Occasional bilberry bumblebees (*Bombus monticola*) were recorded and large numbers of Ashworth's rustic (*Xestia ashworthii*) were attracted to the portable moth trap.

Delia fabricii [Sam Thomas]

Y Carneddau (SH6663) - 31st August - 1st September - Matt Harrow

The trip was, for the most part, wet. However, it provided a good opportunity to scope sites for re-visiting in summer 2019. Despite the poor weather a number of sites around Carnedd Llewelyn (SH683644) and Carnedd Dafydd (SH662630) were visited. The summit ridge between Llewelyn and Dafydd was covered in cloud with very few active invertebrates. Occasional sphaerocerids provided the only excitement with *Sphaerocera curvipes* recorded along with a number of more common species. Around the small, high altitude lake of Ffynnon Llyffant (SH688645) there had been a mass emergence of *Bibio pomonae*. Also around Ffynnon Llyffant a single *Hydrophorus balticus* was recorded amongst a small number of other dolichopodidae. Aside from abundant *Tipula paludosa* several specimens of *Dicranomyia didyma* were found on the moss covered rocks with dripping water at Ysgolion Duon (SH669632). A large population of *Liancalus virens* was also present in this classic habitat for the species. For the 2019 trip the summits and ridges as well as the lake at Ffynnon Llyffant and the wet calcareous cliffs at Ysgolion Duon will be targeted. Hopefully with fair weather we will find a greater range of species!

Meetings 2019

Given the unreliability of the weather in the uplands all meetings are scheduled for two weekends. This is to allow for cancellations due to poor weather conditions. If the meeting is cancelled on the first scheduled weekend then it will run (weather dependant) on the second scheduled weekend.

We will be wild camping on the Friday and Saturday nights for each meeting. An estimated location for camping is given for each meeting. For those who don't want to camp or aren't able to there are plenty of options for accommodation in nearby towns. We will provide a rough schedule for each day to allow anyone not camping to meet us for the day.

A moth trap will be run at the camp on the Friday and Saturday nights.

18th - 19th May – Cader Idris

The most southerly mountain in Snowdonia is also the southern limit for a number of alpine plant species in the UK. We will explore base-rich outcrops, upland lakes and the summit plateau. We will be camping near to Llyn Gafr (c. SH710141) and there are various accommodation options in Dolgellau.

6th – 7th July – Carneddau

The largest and second highest upland plateau in Wales with records of a number of upland invertebrates. We will be camping in Cwm Pen Llafar (c. SH668636) and there are various accommodation options in Bethesda.

20th – 21st July – Cader Idris back up dates

The Cader Idris meeting as detailed above will run on this date if it was cancelled in May.

3rd – 4th August – Carneddau back up dates

The Carneddau meeting as detailed above will run on this date if it was cancelled in July.

Everyone is welcome so if you're interested please contact either Matt or Sam for more details.

Matt Harrow - matt.harrow@hotmail.com
Sam Thomas - sjthomasbotany@gmail.com

Members

Membership Matters

By Late December 2018 we had 377 paid-up members and 330 subscribing to the Dipterists Digest. This is higher than this time last year when the respective numbers were 357 and 310. In 2018 37 new members have joined. We have also 8 new members starting in 2019. This is very encouraging. New members have found out about Dipterists Forum from training courses, our social media and web site and from word of mouth from existing members.

I do urge all members to keep up to date with subscriptions, which fall due on 1st January each year. I am happy to answer any email queries about subscriptions if you are not sure you have paid.

All subscriptions, changes of address and membership queries should be directed to John Showers at:

103, Desborough Road,
Rothwell,
KETTERING,
Northants,
NN14 6JQ
Tel.: 01536 710831
E-mail: showersjohn@gmail.com

Membership & Subscription Rates for 2019

Members and Subscribers are reminded that subscriptions are due on 1st January each year. The rates are as follows:

UK

Dipterists Forum: £8 per annum. This includes the Bulletin of the Dipterists Forum.

Dipterists Digest: £12 per annum.

Both of above: £20 per annum

Overseas

Dipterists Forum and Dipterist Digest: £25 pa.

There is only this one class of membership. Payment must be made in Pounds Sterling.

BANKERS ORDER PAYMENTS

You can set up a banker's order or bank transfer to pay the subscription via online banking using the following details:

Dipterists Forum
NatWest Bank
Sort code 60-60-08
Account no. 48054615

Please add your name to the payment reference or we will not know from whom the payment was made.

International payments should use:

IBAN: GB56NWBK60600848054615
SWIFT: NWBKGB2L

Alternatively you can send your bank the banker's order mandate form, which can be found on the DF website. This form explicitly states that it cancels previous payments to Dipterists Forum.

OTHER PAYMENT METHODS

Cheques should be made payable to:
"Dipterists Forum" and sent to the address above.

PayPal payments can be made to: dipteristsforum@outlook.com

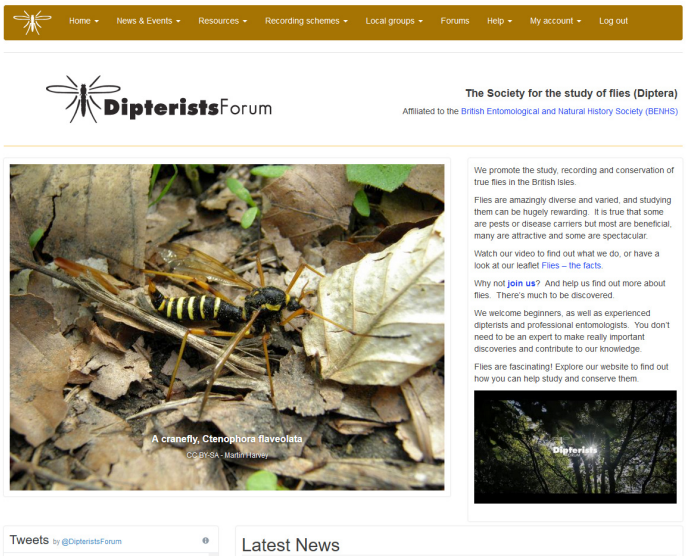
Please e-mail me to let me know when you pay by PayPal.

John Showers

Website Matters

The new Dipterists Forum website

The new website is now up and running, at: www.dipterists.org.uk



There are still some teething problems to sort out, and there are some areas that we hope to develop further over the coming months. However, the main parts of the site are available for use, including:

- Ability to pay for subscriptions online, via PayPal
- News and events details summarised on the home page and with more detail under their own headings
- Forums available for use by members; we are currently using just two headings, "General discussion" and "Learn about flies", the latter intended to include the upload and discussion of photos for identification.
- The "Resources" menu covers various useful topics, including Ken Merrifield's comprehensive lists of web links and equipment suppliers

Most of the site is viewable by anyone visiting the link, but to post messages in the Forums, or to view the "members-only" section of the Resources menu, you need to log in to the website, and to log in you need to be a member of Dipterists Forum. Information on this can be found by clicking on the "Log in" menu at the top-right of the main web pages. If you are an existing DF member you should find that you can log in and set a password using your email address (as long as this hasn't changed since you provided it to DF). If you experience any difficulties please contact John Showers or Martin Harvey. If you are not a member that can be easily remedied! See the "Join DF" page under the Home menu.

Thanks to the Biological Records Centre for setting up and hosting the new website.

Martin Harvey

Logging on to the new website

To log onto it for the first time you need to use your e-mail address as the login username. The site will then send you a temporary password that you can use to log in. Once logged in you should change your password.

If you do not have an email address or if the one we hold is now out of date you will need to email me or Martin Harvey to set it up for you.

John Showers

(*Editor's note: The old website will continue to operate for some time yet*)

Review

Open Access

Crashing into the Paywall

Schiltz, M. (2018). Science without publication paywalls: COAlition S for the realisation of full and immediate open access. Frontiers in Neuroscience, 12(SEP), 2016–2018. http://doi.org/10.3389/fnins.2018.00656

https://www.frontiersin.org/articles/10.3389/fnins.2018.00656/full

Publishing can be the most profitable business in the world if you happen to operate one of the more popular titles. The raw materials are free, paid for by public money and submitted by authors who are obliged to publish in your journal. The peer review system is free too, as it's all carried out by unpaid volunteers. Once it's published you can charge what you like for others to read it, A single subscription journal can be as much as £4,000 per year. Even Universities in the US cannot afford to subscribe to the full range needed by their students and researchers.

The term used to describe website content that requires payment is **paywall**, it's used legitimately by newspapers and the like but in Science it's an abuse. Both Peter Chandler and I come across it frequently as will no doubt many others who try to explore scientific topics. Track down a topic on the internet and fairly soon one item you'll want a peek at isn't available free to read, it's in a journal and it'll cost you $35 even for a peek, not a wise thing to do if you're unsure of its relevancy, or indeed under any circumstances.

Film

An item in New Scientist (27 Oct 2018) briefly reviewed the current state of affairs regarding this issue. It was prompted by the release of an online movie (accessed at **paywallthemovie.com**).

Comprising interviews with scientists and librarians across the world, all of whom were concerned about such exploitation ...

Soon afterwards (24 Nov 2018) New Scientist reported on the **CO-Alition S** initiative - "Science without publication paywalls" (read the article at https://tinyurl.com/ya5gyjmz) which asserts that:

> "*Universality is a fundamental principle of science: only results that can be discussed, challenged, and, where appropriate, tested, and reproduced by others qualify as scientific. Science, as an institution of organised criticism, can therefore only function properly if research results are made openly available to the community so that they can be submitted to the test and scrutiny of other researchers.*"

All this is relevant to us not only as readers and researchers but also as publishers. Although the funding model in Dipterists Forum differs from the medical and university research institutes which are the focus of the above initiatives and campaigns, Peterson et al. provide the biodiversity, ecology, biogeography and conservation context. Our funding is mainly through membership fees, part by volunteers and a little bit of support received from BRC (e.g. the cost of mailing out this Bulletin.) Peter Chandler consults widely to achieve peer review for the Digest. Ours is therefore a membership subscription model, the closest formal Open Access category to which we belong being:

> **Delayed**: Articles are behind a paywall for an embargo period of between 6 and 12 months and then the journal makes them freely available.
> (Membership/Subscription benefit being the reason for the embargo.)

Lawton, G. (2018, November). Access all areas. New Scientist, 240 (24 Nov(3205)), 36–39.

Peterson, A. T., Anderson, R. P., Peterson, A. T., Bolliger, J., Cobos, M. E., Hawkes, L., … Minin, D. (2019). Open access solutions for biodiversity journals : Do not replace one problem with another. Diversity and Distribution, 25(January), 5–8. http://doi.org/10.1111/ddi.12885

Llewellyn, R. D., Pellack, L. J., & Shonrock, D. D. (2002). The Use of Electronic-Only Journals in Scientific Research. Issues in Science and Technology Librarianship, http://doi.org/DOI:10.5062/F41V5BZM [a useful introduction to the Librarian's perspective]

Darwyn Sumner

Pop

Chalk Streams

The trouble with a four year old story about a threatened habitat is that nothing changes. For an environmentally aware newspaper keen to raise such topics, some kind of excuse is therefore required. In the case of the Observer they've happened across a celebrity pop musician (Feargal Sharkey of the Undertones) who's incensed about the deterioration in the water quality in chalk streams (https://tinyurl.com/yb7m4huw) Of the 210 chalk streams in the world, 160 of them are in England. Sharkey, a fly fisherman, is having a go at Thames Water Authority (for whom it's cheaper to pollute, then pay the fine) and the Environment Agency (too soft on offenders) between them responsible for the current situation in which only 14% of these reach good ecological standards (down from 23% four years ago.)

To see how much has changed for these agencies in four years, the following World Wildlife Fund article is a good read:

The State of England's Chalk Streams

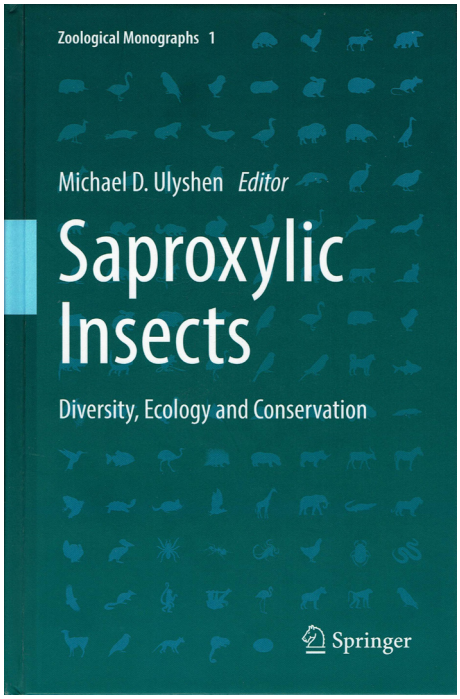
For the maps alone this (https://tinyurl.com/ycxewqdq) is worth downloading. It's unlikely that we have any Diptera species that are related purely to this habitat, if we found one it would be a first as there are no taxa at all that are specific to chalk streams. One can find several mentions of chalk grassland in our "Review of scarce and threatened ..." reports though, perhaps they won't fare too well if the nearby stream is full of sewage.

The **Riverfly Partnership** have taken an interest in chalk streams, they've got a monitoring project on the go looking at 34 sites in Lincolnshire. Details on their site at http://riverflies.org/

Darwyn Sumner

Books

Michael D. Ulyshen (Ed.). 2018. Saproxylic Insects. Diversity, Ecology and Conservation.
Zoological Monographs, vol 1: ix + 904 pp. Springer International Publishing, Cham, Switzerland.
Price £160 (hardback) and see below.



This is a large volume, of which the stated aim is defined as bringing together the most global and comprehensive account of present knowledge of saproxylic insects worldwide. While in many of the topics dealt with this is very effectively achieved, there is less coverage of flies than is the case with some other insects, in particular beetles and termites.

I first learned of this work thanks to Igor Grichanov's regular compendium of dolichopodid literature (Dolibank Notification) received on 15 December 2018. As most booksellers offering it would not then supply before Christmas, I purchased the hardback copy for £160 from Treesource, a subsidiary of Summerfield Books, and it arrived on Christmas Eve. I can say that it took approximately four days to read (if not fully digest) the text – don't worry, it's less than 900 pages as each chapter has separate references, which may be repeated in different chapters, and these together take up about 200 pages.

The following address https://tinyurl.com/ya5qfykk takes you to this volume on Springer Link, where it can be purchased as an e-book for £159-50 or individual chapters can be bought separately (the Diptera chapter costs £23.94). This website includes the abstract for each of the 25 chapters, and a list of the references for that chapter from which there is free access to pdfs of many of the articles cited.

Contributions are from 46 authors from many countries, though none are dipterists; David Bignell of London University is the only UK author (on termites). The editor Michael Ulyshen (USDA Forest Service, Athens, Georgia, USA) is an author of four chapters, including being sole author on Diptera. Following an introduction, the remaining 24 chapters are arranged in four sections, on diversity (10), ecology (5), conservation (8) and methodological advancements (only including molecular tools).

The introductory chapter by Michael Ulyshen and Jan Šobotník relates the history of the development of wood as a resource and its structure and composition. It is pointed out that wood is nutritionally poor with a low level of nitrogen, but that its nutritional value is enhanced by the presence of fungi. Although woody plants first appeared in the Devonian period, it was not until the early Permian that fungi developed the ability to degrade lignin (hence the coal measures resulting from the swamp forests of the Carboniferous). During the Permian the ancestral Coleoptera developed and are considered to have initially had a saproxylic life style, to which their structural features were apparently an adaptation. Although Diptera also first evolved in the Permian, they probably didn't develop saproxylic lineages until the Triassic. An overview is provided of the main orders of insects with saproxylic members and the trophic groups to which they belong, defined as phloem feeders, wood feeders, fungivores and predators, noting that there may be overlap between these groups.

The diversity part includes chapters on Diptera, Hemiptera, Lepidoptera, termites (now considered to be social cockroaches and included in Blattodea) and three each on Coleoptera and Hymenoptera. The chapter by Michael Ferro on the fauna of highly decomposed wood, in the conservation section, also covers all the smaller orders. It is stated in the introductory chapter that Diptera have received surprisingly little attention from researchers; presumably they don't figure as much in the ecological literature that has been searched and forms the basis for most contributions. The Diptera chapter is thus a compilation from the literature, while benefiting from review by Matt Bertone (North Carolina State University) and Ellen Rotheray. The abstract of this chapter provides a good summary of its content and reads: "*Diptera rivals Coleoptera as perhaps the most abundant and diverse order of saproxylic insects, with saproxylic habits known from at least 75 (48%) of the 157 fly families recognized globally. Some fly families are mostly if not entirely saproxylic including Aulacigastridae, Axymyiidae, Canthyloscelidae, Clusiidae, Pachyneuridae, Pantophthalmidae, Periscelididae, Xylomyidae, and Xylophagidae. Saproxylic flies are common inhabitants of virtually all moist to wet microhabitats including sap flows, under bark, in rotting wood, tree hollows, and fungal fruiting bodies. Most species are saprophagous or fungivorous although many predatory species exist as well, including some of the most important natural enemies of bark beetles. Although very poorly studied compared to beetles, it is clear that many saproxylic fly species are declining due to forest loss or degradation, and some taxa (e.g., mycetophilids) are good indicators of forest continuity. The dependence of flies on wet or even saturated substrates suggests they need special consideration when developing conservation strategies. Studies addressing their sensitivity to various management interventions are urgently needed.*"

The appreciation that Diptera may have different habitat requirements to other saproxylic insects is encouraging. It is mentioned that dipterous diversity may be underappreciated because of small size and difficulty of identification. In that respect it is also a factor that it is only the more difficultly identified larvae that are saproxylic, while in other orders adults may also be present in the larval habitat. Ferro (chapter 22, p. 763) does indeed say that they may be first ahead of Coleoptera in saproxylic diversity when "all is said and done." A clue to this is provided by citation (p. 169) of Roger Selby's 2005 thesis on diversity of saproxylic Cecidomyiidae, in which 323 species or morphospecies were obtained from rotting logs in an old-growth forest in Quebec, as an example of finding an "incredible diversity" in one of "the most challenging families." The work of Mathias Jaschhof on this group isn't mentioned, but his finding of hundreds of new species in Germany and Scandinavia in recent years shows how much is still to be learned about saproxylic cecidomyiids even here (the British species have scarcely been studied since Edwards and only about 100 species are recorded).

Diptera families with known saproxylic associations are tabulated and the main habitats involved are summarised for each family. The family composition adopted follows that in Steve Marshall's book *Flies. The Natural History and Diversity of Diptera*, so all craneflies are included in Tipulidae. That book was also one of the main sources for deciding which families have saproxylic members; the Malloch Society's 2001 paper *The biodiversity and conservation of saproxylic Diptera in Scotland* is among other sources cited. This table appears to be largely an accurate account, though the statement that clusiid larvae are predators (as suggested by Marshall) is at variance with more recent conclusions (Rotheray,

G.E. & Horsfield, D. 2013. Development sites and early stages of eleven species of Clusiidae (Diptera) occurring in Europe. *Zootaxa* 3619(4): 401–427), which found the larval feeding to be "spot-sucking of biofilm coating wet, decaying whitewood."

The account of dipteran microhabitats includes sap runs, which are not otherwise covered in this book; it is noted that Diptera are the most abundant and diverse insects at this habitat, where the visiting adult flies are also saproxylic. The chapter is illustrated by Alfred Russel Wallace's drawing of four horned species of *Phytalmia* (saproxylic Tephritidae) found by him in New Guinea, and by 7 colour plates of larvae and 14 of adults. These could have been clearer as backgrounds are sometimes dark, and they are smaller than some plates in other chapters (e.g. those in the chapter on parasitic Hymenoptera are larger and more effective). However, the amount of illustration varies between chapters; it is most extensive in Hemiptera and the main beetle chapter lacks any, though some brightly coloured beetles appear in other chapters (e.g. pp 411, 567).

Diptera are touched on in several other chapters, but not in some where they might have been, e.g. that on Parasitica only covers those attacking wood boring beetle and woodwasp larvae by inserting their ovipositor into the wood. From this we learn that larvae of *Diprion* sawflies have been known to bite off the tip of the ovipositor of a cryptine ichneumonid.

The account of insect/fungus interactions is of interest in describing the range of fungal associations with wood and the types of relationship with insects that exist; some of the papers reviewing host associations of Diptera are cited. Host preferences are discussed and the avoidance of some fungi for no obvious reason is mentioned, while it was speculated that the phylogenetic relationship of fungi may explain preferences if there had been co-evolution. The often overlooked role of insects in spore dispersal is thought to be important. A Malaysian fungus *Ganoderma philippii* is said to depend on its spores passing through the gut of a cranefly larva to enable germination. A *Mycodrosophila* species (Drosophilidae) is thought to assist in dispersal of spores of *Ganoderma applanatum* in Japan.

Dispersal of saproxylic insects, an important issue for species inhabiting a transient resource, is considered but mainly in relation to beetles and termites. Knowledge of the dispersal abilities of species is important for their conservation, and this has been determined in some cases by assessing the genetic variation in populations over a wide area; a study in which no distinct difference was found in populations of *Criorhina floccosa* and *Xylomya maculata* is cited. Diptera are of course good dispersers in the adult stage, saproxylic syrphids in particular needing to disperse from their breeding site to find flowers.

Another topic in which Diptera figure is that of tree hollows, described as a long term stable resource but one becoming rarer in managed forests. Types of hollow and methods of sampling are discussed. Insect genera known to inhabit hollows are tabulated, again mainly Coleoptera with only one page of a ten page table relating to Diptera, where of 32 genera in 11 families listed (based on 10 papers consulted), 20 are of syrphids. Then in the chapter on the final stages of decay, where the author Michael Ferro has coined the term veteris to describe wood in that condition, those Diptera families found in this habitat are listed, also taking into account rot holes in tree hollows as the medium there may correspond to an advanced state of decay. Also here (p. 764) the family Axymyiidae, of which the larvae live in very wet rotting logs, is discussed; the larva, which has a siphon protruding from the exterior of the log, is illustrated (plate on p. 751). This chapter concludes with stressing the need for education about dead wood, if it is to be conserved.

The conservation section begins by explaining the importance of primary forests for conservation of saproxylic insects, a significant issue especially in the tropics and other parts of the world where these still exist. It defines and describes the characteristics that differentiate them from managed forests: absence of fragmentation, continuity, natural disturbance regimes, amount and quality of dead wood, tree species composition and presence of large trees with a range of microhabitats. The minimum size required is estimated as 500 sq km to include all phases of forest development, including variability of disturbance such as fire and windthrow. It is also suggested that sensitive species that depend on diverse habitats in forest interiors may not be able to maintain populations in small fragments.

A separate chapter on fire relates how important are its effects on saproxylic habitats, noting that it was far more frequent in Europe until greater control in the last century. Following a fire there is initial attraction to the location of pyrophilous beetles, which may be getting rarer, but can locate fire sites over long distances; pyrophilous Diptera (*Microsania*, *Hormopeza*) are not mentioned, although covered in some of the references cited, but then we don't know if they are saproxylic. Also following fires, greater habitat becomes available in the longer term for saproxylic insects in general. Presence of early succession trees (birch, aspen and goat willow) is suggested to indicate location of past fires.

As forests in Europe have been subject to exploitation since the Neolithic and this has intensified in recent centuries, it is suggested that the most sensitive saproxylic species may have long since disappeared, so those that remain may react less to change than the original assemblages. It is mentioned that the Hyrcanian beech forests of Iran and Azerbaijan are closest to the original condition of temperate European forests and are currently protected, but still subject to considerable dead wood removal by the local population. Nothing is said of their fauna, but it is mentioned that many of the saproxylic beetles that are rare in Europe are common in the forests of northern Mongolia. Perhaps that is also true of Diptera.

The different requirements for light and openness of habitats is discussed in chapter 1 (p. 34) in relation to studies on beetles, with conflicting results. There were both more species and individuals in sunny than shaded areas in a German forest, while in a similar study in the Ukraine there were also more individuals in the sunny areas but no difference in species richness from shady areas. The latter was carried out in the Uholka-Shyrokyi Luh beech forest, the nearest to a primeval forest surviving in Europe and a UNESCO World Heritage Site. The authors suggest that the trapping methods used in these studies had "the potential to exaggerate the importance of sunny areas, as many insects are more active and thus more readily captured in sunny areas." Perhaps surprisingly in relation to this debate, in a book whose authors are mostly ecologists specialising in saproxylic Coleoptera, there is no mention anywhere in the book of the effect of, or need for, grazing in forest habitats – a refreshing omission to the present reviewer.

The final chapter demonstrates how DNA barcoding is becoming important for identifying the existence of cryptic species or establishing the diversity of species present in a habitat. Particularly for Diptera it will be a useful tool for associating larvae with adults, thus pre-empting the need for rearing to identify the species present in a saproxylic habitat.

The number of papers on saproxylic insects that have been published in recent years in ecological and forestry journals is remarkable, and this book provides a service in bringing this information together – it would certainly have been beyond the ability of a mere dipterist, such as the reviewer, to track down all such relevant references. On the other hand, much of the Diptera literature containing information on saproxylics has been missed, leading to the impression that less is known than is the case. Nevertheless, there is still plenty to be learned, even about our British Isles fauna, so the appearance of this volume should provide us with encouragement to go forward.

Peter Chandler

Meetings
Reports

2018

Stoke-on-Trent Field Meeting

Honeypot challenge

As has become the custom at the summer field meeting, hardened dipterists were persuaded to collect sawflies for me to identify. Each species from a site is awarded one point and the person with the highest points at the end of the week is rewarded with a jar of honey. The 2018 winner was Andrew Cunningham (74 points), with Roger Morris second (55) and Rob Wolton third (36).

The total number of sawflies recorded in the week was 83 species. This compares with 2017 Snowdonia 70 spp, 2016 Canterbury 75 spp and 2015 Nottingham 71 spp. If I had been the only person recording sawflies, the species list would have been just 31 species. The best finds were *Dolerus triplicatus* and *D. bimaculatus* at Wybunbury Moss (Richard Underwood and AH respectively), *Janus luteipes* (Nigel Jones) at Cholmondeley Park, and *Pamphilius varius* at Hatchmere (Roger Morris).

Andrew Halstead

Submitting records for the Stoke-on-Trent Field Week - reminder

I have volunteered to collect the records for this year's Field Meeting. **So far I have had records from only 5 people attending the meeting**.

The principles are the same as detailed in Bulletin #82 (p6):

a. The end product will be a dataset of records published onto NBN Atlas (see https://registry.nbnatlas.org/public/show/dp172), that's my sole objective and extent of my involvement.

b. Your "milestone" for sending records is the **end of March 2019**. This is not as strict as a "deadline", it doesn't matter if you are late, your records simply find their way into future updates.

c. No pressure to send in records, if you treated it as a holiday I hope you had a good time with us, we enjoyed your company.

d. Keep separate spreadsheets for different groups, Diptera on one, and Symphyta on another (provided they were verified by Andrew Halstead). That's all I'll be bunging on the NBN Atlas so if you have other taxa then submit them to the appropriate National Scheme or pop them onto iRecord. Most certainly keep them on a separate spreadsheet - the organisers will wish to see that too.

Feedback to landowners who granted permission is in 3 phases:

1. Alan's account (see last Bulletin) may be used by the organisers as a preliminary report to provide feedback.
2. Malcolm Smart will liaise with all the organisers (Phil, Derek & Nigel) to provide feedback as they see fit as records trickle in.
3. Agencies such as Wildlife Trusts, Natural England, National Trust and the LERCs etc. are all well accustomed to using NBN Atlas as a source of records. Once we've published there we've fulfilled our obligation entirely

Please send your records to me and Malcolm only:

Darwyn Sumner (darwyn.sumner@ntlworld.com)
Malcolm Smart (malcolmsmart@talktalk.net)

Birdfair at Rutland Water

Not one of our formal venues but Erica McAlister gave a presentation there this year and packed a small marquee with her talk.

Mark Avery doubts there are flies that big, Erica

AES Exhibition

6 October 2018, Kempton Park Racecourse

Erica showing flies to a youngster

Matt Harlow demonstrating

Annual Meeting

10th & 11th November 2018

Oxford University Museum of Natural History

It was a pleasure to hold our meeting in this wonderful museum where we were warmly welcomed and excellently served by our hosts, Zoë Simmons and Amoret Spooner. 51 dipterists attended on Saturday, which was devoted to the talks, and about 15 on Sunday for the workshop, all of which are summarised below. As usual, Pemberley Books provided diversion and kindly donated the prize for the best exhibit which was won by Mike Bloxham for his detailed account of the flies of a woodland in the Sandwell Valley. The museum's valuable Diptera collection was made available.

Adrian Pont – *James Edward Collin (1876-1968) - his life, his achievements, his legacy*

The first talk of the day was given by Adrian Pont, who told us about the life and work of James Edward Collin (1876–1968), whom Adrian described as "probably the most significant British dipterist of the 20th century."

Collin's father was a Cambridgeshire farmer. His mother came from a horse-racing family, and a very wealthy one; J.F.Clarke, her father left, in today's money, around £5 million. One of her sisters married George Henry Verrall, another important name in entomology. So Verrall was Collin's uncle by marriage.

Collin was one of a large family – the third of four sons and eight daughters. In his late teens Collin was employed by Verrall as his private secretary and assistant and "then followed a seamless progression from assistant to co-worker to heir to successor".

In the First World War Collin served in the medical corps researching insect-borne diseases. He rose to the rank of captain. In 1928 Collin and his family lived in Newmarket. He took an active part in local affairs as a Conservative Council member and a magistrate, and he combined these activities with the study of flies which was to occupy much of his time until his death 40 years later. Being of independent means he had no need to concern himself with a paid occupation.

A large amount of correspondence between Collin and other dipterists exists. He could be a helpful collaborator and was very hospitable to visiting foreign entomologists, but he could be impatient and irascible with people he thought guilty of careless or shoddy work. He was very much a man of his time and social class who believed that the study of insects should be "a gentlemanly pursuit carried out as a hobby", and was not "a reputable way to make a living". He liked motor cars, travelled from Newmarket to London to buy his first one, and drove it back home, never having had a driving lesson.

Being financially independent, Collin was able to travel around the country to collect flies whenever and wherever he wished. He assembled "what is surely the finest collection of British Diptera", and greatly expanded his considerable entomological library, originally left to him by Verrall, by acquiring every book and monograph published on the subject of Diptera. His own publications are voluminous – more than 220 in all, ranging across a wide variety of taxa and by no means confined to the British fauna.

Collin's work is still held in very high esteem by today's entomologists. The Verrall-Collin collection is now held by the OUMNH and is one of the most important collections of Diptera ever assembled; though as Adrian told us it needs "a major curatorial effort".

This is a very brief outline of Adrian's splendid talk. He gave us a wealth of fascinating detail about the life and work of this remarkable man. Collin lived in a very different world from ours, where social class was more rigidly defined and the wealthy were able, and sometimes willing, to devote their time and energy to scientific pursuits considered mere hobbies. His circumstances and his remarkable abilities combined to make him a founding father of the study of British Diptera.

Howard Bentley.

Karl Wotton – *Syrphid migration*

Karl was inspired to conduct his research on Syrphid migration through reading Lack's work from the 1950s on the migration of insects and birds through a pass in the Pyrenees. In a very interesting and well-illustrated talk he presented his findings so far from studies in a pass in the Pyrenees (Puerto de Bujaruelo 2272masl). The main Diptera taxa were *Episyrphus balteatus, Eristalis* spp (including *E. tenax*) and *Scaeva* spp.. These species undergo a late Summer reproductive diapause when they increase their body fat in preparation for a southwards migration. They are believed to migrate to the Mediterranean hinterland to overwinter, returning North in the Spring.

The studies are being undertaken for a variety of reasons including to try and understand the provision of ecological services (especially pollination and aphid predation by larvae) and the evolution of migration using genome analysis and reverse genetics to assign functions to genes.

Studies of hoverfly movements using vertical radar in southern England showed peaks in June/July of insects heading in a generally NW direction and in August/Sept in a southerly direction. The data shows a strong correlation with records from the Hoverfly Recording Scheme. The numbers involved are truly staggering with 100s of millions entering the UK and billions leaving. During this time these hoverflies are predicted to consume 100s of billions of aphids.

The studies in the Pyrenees involved three methods of counting the volume of migration:

1 Directional Malaise trapping

2 Video trapping

3 Butterfly counting.

The peaks in each counting method correlated well.

During two months work in 2018 over 3 million frames from the video trap were analysed and revealed millions of migrating insects the majority of which were flies, mainly Syrphids, Calliphorids and Muscids. There were also tens of thousands of butterflies and hawkmoths.

Experimental work looked at flies' preferred direction of flight in late Summer using various celestial compasses. This showed a cluster of readings oriented to a southerly direction of flight.

Further analysis is being carried out to compare species composition in other mountainous migration hotspots and to identify the genetic basis for this behaviour.

John Showers

Peter Chandler – Flat-footed Flies, a challenge to record

Peter Chandler's talk reviewed the history of Platypezidae recording in Britain, from Verrall's "British Flies" volume (1901) to the current active recording scheme. This is a small family with only 35 British species, but finding them has always been a challenge.

For a comprehensive review of the various species and their habits, read the two Flat-footed Fly Recording Scheme Newsletters – No.1 (Autumn 2016) in Bulletin of the Dipterists Forum No.82, and No.2 (spring 2018) in Bulletin No.85. Most of what Peter said is covered in these Newsletters, so this report focuses on what struck me as significant in terms of practical things that we can do to contribute to the Scheme.

Adults can often be recognised by their movement as they search for honeydew on leaves, and netting individuals is usually the first way in which we collect members of this family. (I don't see so many these days – are they more scarce, or is my eyesight to blame?)

Sweeping low vegetation in woodland appears to be working for some dipterists in some areas, but with varying degrees of success. Similarly, using long-handled nets for canopy sweeping can be successful, but not all the time.

For *Microsania*, sweeping the smoke of bonfires is the traditional technique, but some years ago, I collected these flies in yellow pan traps set on the battlements of the Castle in Norwich city centre. One of the great puzzles is where *Microsania* breed. They are often found carrying phoretic mites, but the range of mite species found so far have been unable to pinpoint where they originate.

Rearing from host fungi is still the most useful technique for finding Platypezidae – as it adds to our knowledge of their biology, as well as distribution – and is probably the best way of finding less common species.

Also we shouldn't overlook the systematic significance of comparative larval morphology – the larva of *Opetia* (Opetiidae) is still to be described – we know it has been reared from rotting birch logs, and I've trapped large numbers in birch woodland, and seen mating pairs on a birch log, but so far have failed to locate any potential larvae – fame (but not fortune) awaits the persistent birch-log-dismantler who finds Opetia larvae!

So there is plenty of scope for original research using simple rearing techniques – why not consider teaming up with your local fungus study group? Most mycologists are quite harmless, and willing to share their expertise.

Identification is fairly straightforward, using Peter's 2001 Fauna Ent. Scand. volume or the recent Dutch key (Reemer and de Jong, 2016). Peter is always pleased to look at unidentified or problem material, while identification from photos is sometimes, but not always, possible. This is a family where individual contributions from dipterists may appear to be insignificant, but where a team effort can add up to a better understanding of their biology and distribution. So get collecting, rearing and submitting your records!

Tony Irwin

Judy Webb – *Soldierflies and Horseflies of the Oxfordshire fens*

Judy's fascinating talk covered two of the most interesting families of Diptera (okay, so perhaps I'm a little biased!) and their relationships to the fen habitats found in Oxfordshire. Judy started by outlining some of the characteristics of the Oxon fens, explaining that they are alkaline, fed by water from chalk and limestone geology, and with a tendency to produce tufa (the hard substance that results from calcium carbonate precipitating out of calcareous water onto mosses and twigs). The associated springs, streams and pools have water that is low in nitrate and phosphate, and in which stoneworts often grow. This mix of chemistry, warm shallow water and vegetation provides a larval habitat for many species of soldierfly and horsefly.

Good examples of fen habitats can be found in the sites that Judy has worked on around Oxford, including Lye Valley SSSI, and the Parsonage Moor/Cothill Fen SSSI/SAC, along with nearby Dry Sandford Pit (and old quarry that has developed 'proto-fen' habitats with springs and runnels).

Judy went on to describe some of her favourite soldierflies and horseflies! These included Fen Snout *Nemotelus pantherinus* and All-black Snout *Nemotelus nigricornis*, and a whole suite of small, attractive soldierflies in genus *Oxycera*. The habitat is key to the presence of these species: spring heads, rich in tufa, sometimes quite shaded. Judy has reared a number of these species, adding substantially to our knowledge of their habitat requirements.

One such species is the very rare Orange-horned Green Colonel, *Odontomyia angulata*. At Cothill larvae occur in peat cuts in the fen, and also in floodplain meadow and marsh habitats. Egg masses can be found, showing the breeding locations. These usually have waterlogged moss mats, not exclusively calcareous. The larvae are detritivores, scraping up micro-organisms from plants and other surfaces, and are amphibious and able to disperse. They are able to tolerate drying, in shallow temporary pools.

All four species of Stratiomys sodierfly have now been found in the Cothill area, with Long-horned General *S. longicornis* found for the first time in 2018. Both Banded General *S. potamida* and Flecked General *S. singularior* have been getting more common. The rarest of the four, Clubbed General *S. chamaeleon*, has its only English sites in the Cothill area. It needs very calcareous conditions, where its larvae feed on bacteria on stoneworts in warm shallow pools. The adult flies visit umbels such as wild parsnip and hogweed for nectar, but seem to be becoming harder to find, and a lack of nearby flowers is a concern.

Among the horseflies, Bright Horsefly *Hybomitra distinguenda* has been swept and reared from larvae in calcareous tufa among the fen springs. The much rarer Scarce Forest Horsefly *H. solstitialis* was reared from a pupa in waterlogged moss in May 2011 at Dry Sandford Pit. Judy has also reared the Golden Horsefly *Atylotus fulvus* from Cothill Fen, where its predatory larvae were found nearly ready to pupate.

Fens need constant management to maintain the range of conditions used by these flies. Judy has worked with site managers and teams of volunteers to dig new shallow pools, and scything and grazing is carried out to keep short open vegetation. Judy estimates that across Cothill Fen and Dry Sandord Pit there is only 1 hectare of potential habitat for the specialist species.

The dry summer in 2018 left many pools completely dry, with the stoneworts and mosses dead. Larvae may be able to survive by burrowing. *Stratiomys* are hardy, but tabanids need moisture. When the ground water level drops, rainwater may top up the levels but this does not produce the same calcareous conditions. A new Oxford fens project is starting up, aiming to open up some former fen sites to expand habitat.

Many thanks to Judy for providing a fascinating insight into the ecology of these flies, and for her continued dedication to the conservation of their habitats. More details and images are available from links on Judy's website at http://judithwebb.weebly.com/ - scroll down to find the entry for 10 November 2018.

Martin Harvey

Alan Stubbs *2019 –Year of the Fly*

Alan was born in 1940, 79 years before the Year of the Fly. What was the world of Diptera like then and 79 years before that, in 1861? What will it be like 79 years into the future, in 2098?

In 1861 the world populations was just about 1.5 billion and the Great Plains of America were still full of bison, Alan told us. Much of the world was still unexplored in European eyes: Lake Victoria had only been discovered three years earlier. The study of Diptera

was in its infancy, far too difficult for most to approach and lagging behind other orders. There were huge numbers of poorly defined species and the literature was a quagmire.

In the late 1800s, George Verrall took on Diptera and transformed their study. He innovated between 1888 and 1895 with the use of keys for craneflies, and in 1901 produced the first detailed fly monograph – for hoverflies. This was followed in 1909 by one on soldierflies and their allies. Perhaps most importantly, and well ahead of his time, Verrall bought one of the last remnants of Wicken Fen (which he soon passed on to the National Trust).

As WWI was raging (so terrible timing), Lord Rothschild, an entomologist, proposed that Government should set up a wild-life agency and produced a list of required nature reserves. War advances technology fast! In the 1920s binocular microscopes became commercially available, enabling detailed drawings and photos. Later, the 1940s were a major hinge point for the environment – tractors replaced horses allowing difficult land to be ploughed, DDT was introduced as a wonder pesticide, fertilisers became more effective, and so on. The world population started to grow rapidly – today it's 7.6 billion and rising. Back then, a campaign 'Kill that Fly' urged people to do away with the house fly *Musca domestica*: in 2018 in many of the parts of the country this is now a rare species! During WWII The Nature Reserves Investigative Committee, among others, was established and took on board Rothschild's advice. Out of this the 1949 Act came, establishing NNRs, SSSIs, National Parks and the Nature Conservancy. By now, Alan was 9 years old.

In 1951 Charles Colyer and Cyril Hammond published their book *Flies of the British Isles*. **The** most important book on Diptera in Alan's view – it made flies accessible rather than perplexing, a springboard to their study. About this time too, the first RES Handbooks appeared, some Nematocera including craneflies in 1950, and Syrphidae in 1953. These were hardly user friendly for budding entomologists like Alan, but opened the way to the immensely better literature, including keys, that we have now.

In 1901, Verrall listed 2,881 species known to occur in Britain, in 2018 Peter Chandler's checklist has 7,171 species and the list continues to grow by the rate of about 250 species every 20 years. Huge advances in knowledge have been made in the past 100 years or so. Yet there remains so much more to discover. Why do we spend so much money trying to find out whether there is life of Mars, when we know so little about life on our planet? The number of Diptera species recorded even in the Palaearctic is only 6.3 times that known in the British Isles; and for most biogeographic realms is less than this. There must be huge unknown fly faunas across most of the world, many about to plunge into an extinction crisis before we even know of their existence. Getting collections from vanishing habitats worldwide is a priority, a last chance saloon. Even if the specimens become instant fossils.

God in his wisdom made the fly and then forgot to tell us why (Ogden Nash). Still, we have now worked out at least some of the reasons: pollination, nutrient recycling, biocontrol – and for the enjoyment of dipterists!

The increasing number of species known in Britain masks the decline in species abundance – our fauna is much impoverished. Habitat destruction and fragmentation have taken their toll. In the early 1960s, Cyril Hammond pitied Alan's generation since they had not seen conditions before WWII. Now Alan is saying the same to generations that follow him, but about the 1960s. It is very difficult to comprehend past landscapes one has not experienced.

About 110,000 ha of land were under-drained each year across England and Wales in the 1970s, driven largely by the change in land use from grazing to arable. And so forth… 97% of flower-rich meadows have been destroyed since WWII. But even before then, habitat was being lost – that of chalk grassland started in the 1850s. The impact these changes and others have had on our Diptera has largely gone unnoticed.

Even now, losses continue. Many SSSIs remain in poor condition. Blitz grazing, often used to benefit flora, can tip insects over the edge. So too can droughts – experience shows that populations can nose dive in our impoverished and fragmented world. One species lost on a site in a year may have little impact – but if that continues for 79 years?

The most vulnerable fly habitats in Britain are, in Alan's view, brownfield, spring and groundwater seepages, veteran trees (notably beech) and coastal grazing levels. These should be our priority.

Looking ahead, what will the fate of flies be in another 79 years? It's up to us to ensure that future generations are not satisfied with a vestige of what we have now – just as we should not be satisfied with our legacy. Can we use 2019 Year of the Fly to capture the excitement we have about flies and convey it to others, so they care? That's the challenge Alan set us. Are we up to it?

Rob Wolton

Footnote: Alan has offered the presentation upon which his talk was based for our website, so others can draw on it in preparing their own talks. Thank you, Alan.

Steven Falk - Flies on Flickr and fly photography made simple, the Falky Way

Steven's subject for the Sunday workshop was a demonstration of his own Flickr site. His engaging, bright-as-a-button delivery kept us well entertained. Which was just as well as the broadband connection seemed to think it was allowed a Sunday lie-in. Running through the scope and capabilities of his site took a while, but there's no need to repeat that here – just take a look yourself (https://www.flickr.com/photos/63075200@N07/collections/). Suffice to say, it has many 'collections' covering several groups of organisms, not just insects. Steven gave a demonstration on how he updates an entry, using his find this summer of the rare 'flutter fly' *Palloptera laetabilis*.

There was a non-stop stream of helpful hints during Steven demonstration of taking photographs. He uses easily available cameras, nothing too fancy, and which a few people in the audience had. The most interesting of these is the TG4 or TG5 which takes stacked images, has a large optical magnification, and can give excellent results even in 'idiot mode', as Steven put it. His other camera is a Canon SX60, a hyperzoom bridge camera that can do reasonable macro right through to either a bird at some distance or a dragonfly several metres away (at its full x65 optical zoom). From a dipterological perspective it can produce good images of a medium-sized to large fly e.g. an *Episyrphus balteatus* or medium-sized calypterate upwards, though cropping is necessary to make these look larger. Luckily the 16 megapixel sensor gives lots of latitude for this without too much loss of quality. Steven aims for a quick result, since taking pictures is usually has to fit around contract field-work so perfection is not possible nor necessary at the resolution of a Flickr site or PowerPoint presentation. Even photos using a binocular microscope were just taken down the eye-piece – no trinocular needed. The photos are tidied-up using Photoshop Elements, which he uses not only to smarten the colours and sharpness but to remove pins and grot from staged insects placed in life-like positions – his *Bombus pomorum* on a dandelion uses a specimen from mid-Victorian times but you'd not notice.

It all sounded simple and eminently within the capability of anyone, but this overlooks Steven's artistic ability to see composition, exact life-like colour and colour balance, and his eye for detail – all qualities that many of us lack.

Martin Drake

9th International Conference of Dipterology

I am sitting by my hotel pool, recovering after one of the more exciting conferences, that I have been to in a while. A conference made exciting for two reasons, the first is that it was held in Namibia. I have only been to the African continent twice and this was to be my first time in Namibia. I had bot flies on my mind. And secondly, talking about flies, was that the conference was the 9th International Congress of Dipterology – arguably the most important and enlightening conference for any lover of flies. Organised by Dr Ashley Kirk-Spriggs, Senior Museum Scientist and Head of Department of the National Museum, Bloemfontein, South Africa, this conference was originally to be hosted in South Africa, but eventually ended up in the neighboring country.

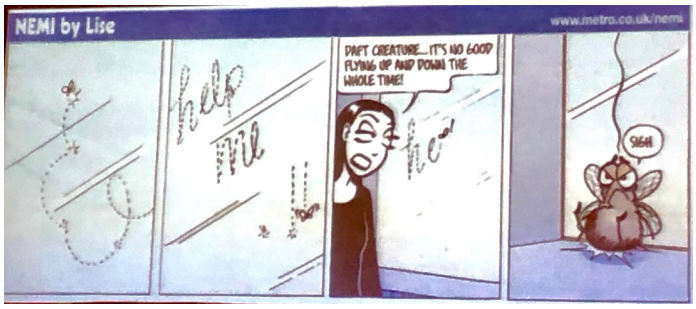
And what a conference it was. After Ashley introduced and opened the conference we had the pleasure of being welcomed to Namibia by the Hon. Deputy Minister Bernadette Maria Jagger, the Deputy Minister for the Environment and Tourism. A Female opening sceptic about the point of flies before she had been contacted, she ended with a changed heart emphasising the value of all things flies, especially highlighting their importance in tackling wildlife trade and destruction.

And with the opening plenary being given by Dr Netta Dorchin, from Tel Aviv University, the conference was set to challenge with some amazing research topics and lively debates. For Dorchin's work, and passion, is with Cecidomyiidae – the gall midges. It's not often that I will get to write cecids and love in the same sentence but there you go. And she made them quite fascinating, honestly, she did. I had not properly registered how difference some of their cycles were - did you know for example that some species are predators on other species of gall midge?

And from there we were racing. There were four concurrent sessions running over the next five days starting with a plenary most mornings and an evening event each night including two lectures which were open to the public).

And there was everything included in between from Higher level phylogenomics using all sorts of different molecular and morphological methods to describing the behaviour for frog-Feeding midges, and a bit of mating videos of a new species of marine chironomid found in China. I went to a fascinating talk on using 3D models to not only help show the different parts of the male genitalia but also to then use as printed models of larvae to help for kid's demonstrations. The squishy Blephariceridae larvae was something that I coveted. Researches came from across the globe, from Brazil to Japan, and Canada to Australia, and from all levels – from students upwards. And a great sign for females in the science community was that the winner of the photography award, of the poster presentations and the student talks were all women – won on their merit alone.

And there was a good representation from the British. Martin Hall was the second plenary of the conference paying both homage to KGV Smith, a great British Dipterist and talk about his work with forensic entomology. Not only did he amaze the audience with what they could discover about what the flies were telling them (as not demonstrated in a comic he showed) but he also demonstrated some lovely videos of the internal development of pupae.



When you don't understand fly!

I gave two talks as well as enjoying as many different ones as I could, the first on a Next-generation DNA sequencing project that my Collaborators Dr Mara Lawniczak and Dr Petra Korlevic from the Sanger Wellcome Institute, are carrying out on the Natural History Museum Mosquito Collection, and a session plenary on the Ongoing survey and outreach work that I am carrying out in Dominica. Barbara Ismay also ran a session on Developments in acalyptrate dipterology in which she also gave a talk on Pseudeurina (Chloropidae), and John Ismay gave the session plenary on the high levels of diversity and Endemism of New Guinean Chloropidae. Pete Boardman gave a talk on Afrotropical Craneflies and Marion England (Pirbright Institute) gave an insightful talk on the Blue tongue vectors and British zoo animals. And one of the doyens of British Diptera Dr Adrian Pont gave a session plenary talk on the research and impact of Dr Roger Crosskey (from a paper co-authored by Zoe Adams).

Dr Adrian Pont an honorary member of the International Congress, a special honour bestowed on very few living Dipterists (thoroughly deserved) and gave a wonderful introduction to the Manual of Afrotropical Dipterology at its launch on Tuesday evening (if you have not got the first two parts – I thoroughly recommend them)

Dr Adrian Pont waxing lyrical about the new Manual of Afrotropical Diptera

Roger Thomason was prowling around with his camera so I should expect lots of images of animals and plants to appear on Facebook shortly. Pete Boardman highlights a personal favourite of many with this stalk-eyed fly. If you are on twitter, go to type in #ICD9 in the search and scroll through the week that was.

Erica McAlister

The Year of the Fly

Welcome to 2019, and more importantly welcome to International Year of the Fly! Yes, it is a thing and yes, the Dipterists Forum and many more organisations from Natural History Museums, Natural History Societies, Entomological supply companies etc across the UK are getting together to create a series of inspiring events up and down the country.

Originally the brainchild of Ashley Kirk-Sprigs, a brilliant Dipterist from South Africa, who is coordinating the publication (and editing) of the Afrotropical Manual of Diptera, and recently organised the International Congress of Dipterology in Namibia, this year will see a global push in the understanding of Diptera. Fed up, and rightly so, with the dominance of vertebrates and the lack of understanding of these much maligned beasts he decreed that 2019 gives itself to Diptera.

And I couldn't agree more. I have fought many an uphill battle in support of these magnificent creatures and so have been organising all sorts of events in the UK with the help of Fly folks across these isles.

There are more flies in the UK than there are mammals across the globe. And some of these are incredibly rare – Fonseca's seed fly as championed by Buglife https://tinyurl.com/yc3b23zg is one of our rarest endemic invertebrates in the UK, and is just limited to a short stretch of coastline in Northern Scotland. This species needs protection as much as any of its much larger cousins. The Dipterists Forum seeks to increase the knowledge of this species, and all UK species by running courses, talks and promoting the recording schemes to help us monitor populations. In today's climate, where land use and climate change threaten our biodiversity, it is critical that we understand our biota. And the flies make up such an important part of that, getting their tarsa stuck into all sorts of ecological pies from pollination, decomposition, predation, vectors to feeding us and our livestock. No other group of animals are so ecologically diverse. And look gorgeous whilst doing so.

The charismatic *Bombylius major* (female) from Regents Park, London. Image from Steve Falks excellent Flickr site https://tinyurl.com/yadfhkca

I don't need to tell this to the bulletin readers – I am already preaching to the converted – but we are asking for your help in making this year a success. I am kick starting my 'International Year of the Fly' by giving a talk at the London Natural History Society on the 15th of January about the 'Secret Life of Flies'. This will be followed, over the next 12 months with Natural History Museum collection visits and talks, walks and lectures with different Natural History societies up and down the country, and visits to schools and Universities, by hopefully loads of different members of the Dipterists Forum.

And this is very much where we are asking for your help in organising local events or talks, or asking for another member to come and give talks, run workshops etc. Don't be afraid to ask for us to come to you – the Dipterists Forum has members all over the place, most of who are not known for being shy and retiring! Contact me for more information about this.

The timetable of events will be regularly updated on the Dipterists Forum website (www.dipterists.org.uk) as well as on the Dipterists Forum Facebook page (https://tinyurl.com/y87gyqmh) and on our twitter feed @DipteristsForum – be sure to check those out to see what is happening in your local area.

Each month there will be a **fly of the month**, we start with the winter gnats, with a blog about the UK species, focusing each time on a seasonally interesting species, and throughout the year you will be able to learn more about the bee flies (there is always interesting stuff about the bee flies), the St Marks Fly, and *Criorhina ranunculi* – a magnificent bumblebee mimic as Steve Falks puts it. Why not write something yourself? We are always keen to hear about new observations, see wonderful photographs and learn new facts about our flies.

Criorhina ranunculi male - Snitterfield Bushes, Warwickshire 2017f © Steve Falks

And it's not just us getting stuck on this year but the **Royal Entomological Society**, the **Amateur Entomological Society**, **Buglife** and **BBC Wildlife** will also be posting and tweeting about flies and events centred on these marvellous mavericks.

We have enlisted the help of the UK's Natural History Museums to also talk about the British fly collections that they have under their roofs and highlight some of our favourite British Collectors. How much do you really know about Verrall and the collection at the Oxford Museum of Natural History? Known for his love of Lepidoptera but what did Percy Grimshaw add to our knowledge of Diptera and the collections at the National Museum of Scotland? And lest we not forget the Natural History Museum's very own Francis Walker – friend or foe of Dipterists what with his love of new species? Throughout the year you can attend events at different museums and these will be listed on the website.

And what more to get you excited than a discount on a beginners Fly collecting kit generously given at the Anglian Lepidopterists Supplies (see advertisement below)

Erica McAlister e.mcalister@nhm.ac.uk

2019

Diptera Workshops 2019

Empids and Hybotids

Preston Montford Field Studies Centre

15 - 17 February 2019

Tutored by Nigel Jones and Stephen Hewitt

This course will be taking place at around the time this Bulletin is published. A report will be included in the next Bulletin.

Martin Drake

Key-writing workshop

Dinton Pastures

31 March 2019 (10:00 - 4:30)

Led by Martin Ebejer

This workshop is aimed at those who have some experience of using keys, and may want to have a go at writing their own. Help will be given to novice key writers, as well as tips and advice for those who have already got some experience in this field.

In order to make best use of the time, Martin is keen to tailor the workshop to individual needs, so early booking would be appreciated. Please send expressions of interest to Tony Irwin straight away and give an indication of what you hope to gain.

10.00 – Introduction: Principles and methods of writing a modern key – emphasis on genera and species.

10.40 – Questions & discussion.

11.00 – Coffee break

11.20 – Practical session a) tabulation of characters, b) writing the key (material prepared in advance using a small group of species; aimed at complete or near complete beginners)

13.00 – Lunch

13.45 – Individual's sessions (aimed at those who have made attempts at writing a key and may have come up against difficulties they wish to discuss)

15.30 – Summary and sharing learning points/experiences from the workshop. Handout of the introductory presentation.

16.30 – Close

Contact Tony Irwin at dr.tony.irwin@gmail.com

Summer 2019 Field Meeting

Central Scotland

22–29 June 2019

The Summer Field Meeting will be in central Scotland this year, based at Stirling University. OS Explorer Map 366 covers the immediate surrounding area, while Alan's introduction below gives an overview of the region. We are looking forward to what promises to be a very interesting week. Last year's summer field meeting was my first and I thoroughly support Alan's comments about how sociable and educational these meetings are for those of us relatively new to studying Diptera.

The price for the week will be £343 and includes the following:

Single en-suite rooms in Willow Court

(see http://www.stirlingvenues.com/accommodation/guest-accommodation/)

Use of a workroom (a laboratory provided by the University)

Full breakfast and two course evening meal. Use of a kitchen with fridge for lunch preparation. Free parking on site

See our website (www.dipterists.org.uk) for updates. We have block-booked 25 rooms. To reserve your place a deposit of £50 is required, with the full payment payable by May 10th.

The preferred method for payment of your deposit is by bank transfer using the following details:

Dipterists Forum

Natwest Bank

Sort code 60-60-08

Account no. 48054615

Please add your name to the payment reference AND send an email (including any special requirements) to both the treasurer (Helophilus@hotmail.co.uk) and the secretary (jane.e.hewitt@gmail.com), who will be coordinating the administrative arrangements.

For those who would to prefer to pay by cheque, a booking form may be downloaded from https://tinyurl.com/y9u3pc44 and sent to the treasurer. Again, please email the secretary to let her know you are planning to attend.

Jane Hewitt, Secretary

About Central Scotland

Our summer field meeting this year is to be based at Stirling University from 22-29 June 2019.

Stirling Castle commands the historic Gateway into the Central Highlands, and remains a major focus for roads travelling out in all directions. It is placed on one of the major fault lines, even if subsidiary to the Highland Boundary Fault not far to the north. There is a great variety in geology and landforms, and accompanying varied habitats in this strategic position between the Central Lowlands (difficult to classify as 'low') and the true Highlands.

Eons ago, we held a field meeting based at Stirling University and it remains one of the most interesting and productive venues we have experienced. Apart from the earlier meeting, the area is relatively poorly recorded for flies and there remains considerable potential. The 'lowlands' have a great variety of habitats including lakes and raised mires. The most accessible uplands have very a different character to the Spey Valley but nonetheless have their own particular characters with interesting habitats and faunas. Rivers were largely neglected before but should prove to have special species. Come and see for yourself.

A reminder that field meetings are more than a chance to experience new places and recording flies. They are also social events, the chance to be with a group of people who share your interests and to learn from the experience of others. Even if you are nervous about the social idea, be assured than newcomers are very welcome even if you currently know little about flies. Everyone has to start from square one and this is a superb way of learning the ropes and getting help in identifying flies.

Alan Stubbs

Annual Meeting 2019

National Museum Cardiff

Saturday 9th & Sunday 10th November 2019

It was 2008 when we last went to Cardiff for 'Dipterists Day', and on at least two occasions before that. We have been made very welcome there and their Diptera collection is definitely worth inspecting. A programme will appear in the Autumn Bulletin and website when we have some speakers lined up.

Martin Drake

Dipterists Forum Core Events

See our websites for many more

And now ...

Comedy

Ken Merrifield has drawn my attention to The Comedy Wildlife Photography Awards. In my sheltered life I had no idea there were such things.

But how, I ask, is it that all the select pictures for 2018 are vertebrates. That bias is only funny in the funny peculiar sense.

If only flies could talk I am sure some would provide a very good stand-up act, recounting the real and fictitous circumstances of their life. Second best would be The Fly Muppets. That would surely get good TV ratings, and a welcome change from endless tat programs.

But if it has to be still photography, what would one chose? It is much easier on TV since mood music (plus or minus yuk canned laughter) sets the audience response. So why should a still photo of a pair of lizards embracing in a fight, or a pair of glum mammals facing each other be comedy, any more amusing than a stand-off between 2 male trypetids. The answer of course is that trypetid flies are far more attractive than the winning entries for 2018, and flies anyway much more fascinating than boring vertebrates for which any unusual pose will be viewed as light relief.

If selection is biased, then I feel free to chip in my bias. Hoo-ray!

Alan Stubbs

Contributing Bulletin items

Revised 2018

Text

1. Articles submitted should be in the form of a word-processed file via E-mail which should have the phrase "DF Bulletin" in the Subject line **or placed in the appropriate Dropbox, details of which are emailed out by the editors to committee members (others please enquire)**. Email text alone will not be accepted.
2. Please submit in native format (http://en.wikipedia.org/wiki/Native_and_foreign_format) and in "text-only" Rich Text Format (.rtf) and additionally send pictures in their original format. An accompanying print-out (or pdf) would also be useful.
3. Please note the width of the borders used in Dipterists Bulletin; for conformity with style would newsletter compilers please match this format. The document must be A4.
4. **Do not** use "all capitals", underlining, colouring, blank lines between paragraphs, carriage returns in the middle of a sentence or double spaces.
5. **Do not include hyperlinks in your document.** Since they serve no purpose in a printed document and the editor has to spend time taking them out again (the text is unformattable in DTP if it has a hyperlink attached), documents containing hyperlinks may be returned with a request for you to remove them. There's a guide on how to remove Word's default hyperlink formatting at https://tinyurl.com/ybfpxlj6 Scientific names should be italicised throughout and emboldened only at the start of a paragraph.
6. Place names should have a grid reference.

Illustrations

7. Colour photographs are now used extensively in the Bulletin, they appear coloured only in the pdf versions of older Bulletins prior to 2018.
8. Please include all original illustrations with your articles. These **should** be suitably "cleaned up" (e.g. removal of partial boxes around distribution maps, removal of parts of adjacent figures from line illustrations) but please do not reduce their quality by resizing etc. .
9. Please indicate the subject of the picture so that a suitable caption may be included, in some cases it will be possible for the picture file's name to be changed to its caption (e.g. 049.jpg becomes Keepers Pond NN045678 12 Oct 2008.jpg).
10. Add the appropriate metadata to your picture. Your camera instructions will tell you how to add **your own name** to every shot you take. There is also a field for title (species name) and location which would have to be added afterwards.
11. All group pictures should identify all the individuals portrayed.
12. **Powerpoint** and Word files are a useful means of showing your layout but this is not an appropriate method of sending images. We'll be glad of AGM presentations in Powerpoint if that's all we can get.
13. **Dropbox** or similar is appropriate for submitting images for larger files.
14. Line artworks are also encouraged - especially cartoons
15. Colour pictures and illustrations will be printed in colour from 2018
16. A suitable colour photograph is sought for the front cover (and inside front cover) of every copy of the Bulletin, note that it must be an upright/portrait illustration and not an oblong/landscape one for the front cover.
17. Due to the short time-scales involved in production, the editors will not use any pictures where they consider there to be doubt concerning copyright. **Add your personal details to the metadata of the picture**, guidelines to this in Bulletin #76.

Tables

18. Tables should be submitted in their original spreadsheet format (e.g. Excel)
19. Spreadsheet format is also appropriate for long lists

When to send (deadlines)

Spring bulletin

20. Aims to be on your doorstep before the end of February, the editorial team has very little time available during January and so would appreciate as many contributions as possible by the middle of December; the deadline for **perfect copy is the 31st Dec**, it will be printed then distributed in late February. Please note that the date for contributions is now earlier than for previous Bulletins.

Autumn bulletin

21. Aims to be on your doorstep by early October, contributions should therefore be made to the editor **by the end of July**. It will be printed then distributed in time for final notification of the Annual Meeting. although late details may be posted on our website. Please note that the date for contributions is now considerably earlier than for previous Bulletins.

Where to send

22. Would Bulletin contributors please ensure that their items are sent to **BOTH** Darwyn Sumner and Judy Webb.
23. Compiling and proofreading take place immediately upon receipt. Please send only your final proofs.

Newsletters

24. Please ensure that your newsletters have an EVEN number of pages so that they can start on recto and end on verso.

Determining resolution and dimensions

Different graphics applications have different means of displaying this information but typically, even if you use the default system that came with your camera, you should be able to find out the following image information:

25. **Dimensions:** Bulletin columns are 9cm wide. Your picture should be at least this size, but double that is excellent. At that size it must have the following resolution:
26. **Resolution:** Commercial offset printing (this Bulletin and Dipterists Digest) requests 300 dpi. Images larger than the required dimensions we scale down, thus increasing their resolution. This makes no difference to the commercial print quality but the pdf version will have better resolution when one zooms in.

Image metadata

The manual that came with your camera provides instructions on how to set the camera up so that your own name is automatically placed in the image metadata. This is a good practise for a variety of reasons.

The software that came with your camera (or you downloaded) will give you access to other metadata fields which you can add afterwards, many of them can be useful in managing your collection of images.

Consider adding the species name to the "title" field and location details to the "location" field.

Third party image organisers (termed "digital asset managers") may be obtained and were discussed in Bulletin #76

AGROMYZIDAE NEWSLETTER

LATEST NEWS FROM THE NATIONAL AGROMYZIDAE RECORDING SCHEME

A SUMMARY OF 2018

A BRIEF UPDATE

THE SECOND YEAR…….

It is now two years since the National Agromyzidae Recording Scheme (NRS) was launched and it is hoped that everyone who has and still does contribute to the scheme is benefitting from its existence!

At present, there are 31,932 records in the NRS Database, covering 326 species, which represents 80% of the species known in the UK.

Historical records are still be sourced and it is hoped that during the upcoming year, data from Kenneth Spencer's collection at NHM London will be extracted and added to the NRS database, which will almost certainly account for the missing 20% of species.

During 2018, the NRS ran a mini citizen science project which attempted to ascertain the true distribution status of the Hogweed miners *Phytomyza pastinacae* and *Phytomyza spondylii*. Several people participated, although success in rearing adult males, unfortunately, was rather poor. Their larval mines were also rather thin on the ground during the year, possibly due to the heat wave during the summer.

Despite the limited amount of specimens, the project was made worthwhile by one adult alone, with *Phytomyza pastinacae* been reared from mines collected in Northern Ireland, which represented the first confirmed occurrence of the species there.

It is hoped that the project will continue in 2019 and that conditions allow a much better year for the species.

Unfortunately, the NRS newsletter was limited to just four editions (excluding this current edition). However, hopefully more will be produced next year, especially during the more productive leaf-mining months.

Feedback and the comments received have been very positive but please do get in touch if you have any suggestions in terms of improvements or aspects of the NRS you would like to be addressed!

SUMMARY OF IRECORD DATA

MONTHLY BREAKDWON OF IRECORD RECORDS

During the past twelve months, the following 'accepted' records were submitted via iRecord;

Month	**2017-18**	**2016-17**
December '17	82	171
January '18	132	130
February	128	139
March	142	105
April	111	102
May	178	134
June	366	106
July	277	172
August	360	168
September	269	241
October	284	347
November	203	169
TOTAL	**2,532**	**1,984**

The amount of records received during the summer was mightily impressive, in spite of the prolonged period of hot weather!

Compared to the NRS's first year, 'accepted' records have increased by 25%, which is a superb achievement - every record really does help increase our knowledge and understanding of the Agromyzidae.

Many records, unfortunately, had to be rejected for not been supported by a photo. This stipulation is still met with some resistance at times, however, by having this requirement in place, it has ensured that the NRS Database is as accurate as possible.

Later in the newsletter, the number and actual species recorded will be discussed.

A very big thank you to everyone who has contributed to the totals above, hopefully 2019 will yield even more records, could 3,000 be achieved!?

Almost every recorder who submits records are keen amateur naturalists, with a passion for enhancing their knowledge, whilst at the same time, providing extremely valuable data.

During its first two years, the NRS has received over 4,500 records from iRecord users, which is more than the number of records held within iRecord between its launch in 2012 and 2016. It just shows that by increasing awareness and having a point of contact for recorders who may require assistance, it can really help generate interest in an otherwise rather quite niche family of flies.

Graham Moates, who had never looked at a leaf-mine until 2017, writes;

“I was first introduced to leaf-miners on a churchyard survey in August 2017 by local naturalist and friend, James Emerson. Since this time – inspired by the newly launched Agromyzidae NRS - searching for leaf-mines of both micro-moths and Agromyzidae has become a regular pastime.

My preference has always been for lesser surveyed species groups in areas which are under-recorded. Fortunately, there are many such areas in Norfolk away from the North Norfolk coast and Broads and searching for leaf-mines can literally be undertaken anywhere starting with one’s own garden.

Most of my records tend to come from within Norfolk and north Suffolk although I have also managed to get a few records on various trips from Scotland, Northern Ireland and Wales.

The online resources for leaf-mines as well as guidance and prompt verification from the Scheme Organiser are excellent. As a relative newcomer to Agromyzidae, the requirement to submit photos adds to confidence in the record both for myself as a recorder and other data users. Since the start of the NRS, I have managed to submit over 400 accepted Agromyzid records across 47 species.

Looking forward, I hope to find some species, such as *Phytomyza conyzae* and *Chromatomyia scolopendri*, which have so far eluded me and enter the world of rearing and dissection”.

Agromyza nigrescens; a late larval record © Graham Moates

Another newcomer to the world of Agromyzidae is Aideen O’Doherty, from Northern Ireland, who writes;

“Up until a few weeks ago I worked in the Stormont Estate in Belfast, Northern Ireland. I have had a casual interest in native plants for some time, and having found Broad-leaved Helleborine (Epipactis Helleborine) beside where I park my car on the estate and having then come across CeDAR's online recording portal which feeds into iRecord in an attempt to log it, I started recording plants I saw on the estate to improve my botany. Fungi are quite numerous on the estate, which is fine in the colder months, but what's a girl to record in the summer once she has done most of the plants, or if the bigger fungi are heavily delayed by hot weather as they were this year?

CeDAR is the Northern Ireland Local Environmental Records Centre. They posted a suggestion to record *Phytomyza Ilicis* on Twitter at the end of 2016. I found one soon enough. Barry then confirmed my record and I became aware of his newsletters.

I noticed pretty early on that there was precious little in terms of Agro records on CeDAR/iRecord, the NBN or Biodiversity Ireland for Ireland as a whole, so I thought it might be useful to try to record these more. I've been able to provide a good geographical spread this year because I've been on quite a few Northern Ireland Fungus Group Forays, visiting quite a spread of locations across NI.

The newsletters and Barry's promptness and patience in confirming (or indeed refusing) records have helped me to learn. As I worked on the estate, the fact that he checked in so regularly has made it possible for me to revisit mines where I have not managed to capture some key features initially. I have often found things for the first time the day after he mentions them on Twitter.

I seem to find *Phytomyza marginella* quite a lot compared to recorders in Britain, which has led me to wonder if it might be more frequent here? I've found a few things that are new for Ireland or NI but, as there are so few recorders of diptera here, it was always going to be on the cards with the right kind of resources.

The requirement of the scheme to post a photo is, of itself, gradually bringing into existence an id resource that I have found highly valuable.

I've just moved to the Northern Ireland Department of Finance. Its office is on some reclaimed land in the Belfast Harbour Estate. I walked out for my first lunchtime walk on my first day and was greeted, within 100m of the office, by *Aulagromyza heringii* and *Agromyza alnivora*. Not bad eh!”.

Records are received from all over the UK via iRecord, with the following records received per VC during 2018;

VC	County	No. of records
1	West Cornwall with Scilly	7
2	East Cornwall	6
3	South Devon	9
4	North Devon	6
5	South Somerset	34
6	North Somerset	27
7	North Wiltshire	-
8	South Wiltshire	1
9	Dorset	4
10	Isle of Wight	11
11	South Hampshire	18
12	North Hampshire	33
13	West Sussex	29
14	East Sussex	25
15	East Kent	15
16	West Kent	23
17	Surrey	46
18	South Essex	3
19	North Essex	9
20	Hertfordshire	51
21	Middlesex	12
22	Berkshire	49
23	Oxfordshire	53
24	Buckinghamshire	69
25	East Suffolk	19
26	West Suffolk	42
27	East Norfolk	381
28	West Norfolk	92
29	Cambridgeshire	23
30	Bedfordshire	99
31	Huntingdonshire	3
32	Northamptonshire	11
33	East Gloucestershire	113
34	West Gloucestershire	7
35	Monmouthshire	13
36	Herefordshire	22
37	Worcestershire	11
38	Warwickshire	14
39	Staffordshire	13
40	Shropshire	70
41	Glamorganshire	65
42	Breconshire	30
43	Radnorshire	1
44	Carmarthenshire	3
45	Pembrokeshire	16
46	Cardiganshire	3
47	Montgomeryshire	1
48	Merionethshire	2
49	Caernarvonshire	22
50	Denbighshire	14
51	Flintshire	9
52	Anglesey	12
53	South Lincolnshire	6
54	North Lincolnshire	20
55	Leicestershire (with Rutland)	157
56	Nottinghamshire	7
57	Derbyshire	20
58	Cheshire	23
59	South Lancashire	29
60	West Lancashire	14
61	South-east Yorkshire	60
62	North-east Yorkshire	68
63	South-west Yorkshire	56
64	Mid-west Yorkshire	21
65	North-west Yorkshire	9
66	County Durham	-
67	South Northumberland	5
68	North Northumberland	2
69	Westmorland (with Furness)	26
70	Cumberland	5
71	Isle of Man	20
72	Dumfriesshire	4
73	Kirkudbrightshire	3
75	Ayrshire	13
76	Renfrewshire	5
77	Lanarkshire	1
80	Roxburghshire	2
81	Berwickshire	-
82	East Lothian	2
83	Midlothian	-
84	Linlithgow	1
85	Fifeshire	15
86	Stirlingshire	-

87	West Perthshire	5
92	South Aberdeenshire	1
96	East Inverness-shire	1
100	Clyde Isles	1
103	Mid Ebudes	2
106	East Ross & Cromarty	1
108	West Sutherland	1
111	Orkney	21
H33	Fermanagh	8
H36	Tyrone	10
H37	Armagh	22
H38	Down	137
H39	Antrim	73
H40	Londonderry	12

The NRS does not hold any records for the following VC's;

VC	County
74	Wigtownshire
78	Peeblesshire
79	Selkirkshire
88	Mid Perthshire
89	East Perthshire
93	N. Aberdeenshire
94	Banffshire
95	Moray
97	W. Inverness-shire
98	Argyllshire
99	Dunbartonshire
101	Kintyre
102	South Ebudes
104	North Ebudes
105	W. Ross & Cromarty
109	Caithness

THE SPECIES…….

IRECORD SPECIES RECORDED

At present, there are around 400 species of *Agromyzidae* which have been recorded in the UK, not all of which are actual leaf-miners.

Species new to Britain are frequently added to the British list and one such species will be discussed later in the newsletter.

It is no surprise that the Holly leaf miner, *Phytomyza ilicis*, is still the most recorded species, however, it only made up 30% of the total number of records received (2017: 43%).

During the year, 123 species were recorded by iRecord users, compared to the 125 in the previous year;

Species	No. of records
Phytomyza ilicis	769
Phytomyza ranunculi	151
Agromyza anthracina	98
Phytomyza agromyzina	91
Phytomyza chaerophylli	82
Agromyza alnivora	72
Liriomyza amoena	60
Phytomyza lappae	57
Phytomyza glechomae	50
Phytomyza minuscula	48
Phytoliriomyza melampyga	47
Agromyza nana	44
Liriomyza eupatorii	41
Chromatomyia aprilina	39
Chromatomyia primulae	39
Agromyza idaeiana	38
Phytomyza astrantiae	34
Chromatomyia lonicerae	31
Phytomyza cytisi	29
Aulagromyza luteoscutellata	26
Aulagromyza tremulae	26
Agromyza alnibetulae	25
Agromyza flaviceps	25
Amauromyza flavifrons	25
Chromatomyia scolopendri	25
Phytomyza hellebori	24
Amauromyza verbasci	23
Amauromyza labiatarum	21
Liriomyza pusilla	21
Liriomyza strigata	21
Cerodontha iridis	19
Phytomyza aquilegiae	19
Phytomyza leucanthemi	19
Cerodontha iraeos	18
Aulagromyza populicola	16
Chromatomyia milii	15
Agromyza demeijerei	14

Agromyza nigrescens	14
Phytomyza ranunculivora	14
Agromyza dipsaci	13
Aulagromyza heringii	13
Liriomyza congesta	13
Agromyza sulfuriceps	12
Phytomyza marginella	12
Liriomyza pascuum	11
Amauromyza morionella	10
Aulagromyza tridentata	10
Phytomyza krygeri	10
Calycomyza artemisiae	9
Chromatomyia nigra	9
Phytomyza conyzae	9
Chromatomyia horticola	8
Phytomyza plantaginis	8
Agromyza filipendulae	7
Chromatomyia ramosa	7
Phytomyza angelicae	7
Phytomyza heracleana	7
Phytomyza petoei	6
Liriomyza flaveola	5
Nemorimyza posticata	5
Phytomyza angelicastri	5
Phytomyza tetrasticha	5
Agromyza johannae	4
Liriomyza puella	4
Liriomyza sonchi	4
Phytomyza bipunctata	4
Phytomyza eupatorii	4
Phytomyza tussilaginis	4
Agromyza albitarsis	3
Calycomyza humeralis	3
Chromatomyia asteris	3
Chromatomyia syngenesiae	3
Phytomyza brunnipes	3
Agromyza abiens	2
Agromyza mobilis	2
Aulagromyza populi	2
Cerodontha denticornis	2
Cerodontha fulvipes	2
Cerodontha muscina	2
Liriomyza pisivora	2
Phytomyza artemisivora	2
Phytomyza crassiseta	2
Phytomyza hendeli	2
Phytomyza obscurella	2
Agromyza flavipennis	1
Agromyza frontella	1
Agromyza igniceps	1
Agromyza lithospermi	1
Agromyza myosotidis	1
Agromyza nigrociliata	1
Agromyza viciae	1
Agromyza vicifoliae	1
Aulagromyza cornigera	1
Aulagromyza fulvicornis	1
Aulagromyza hendeliana	1
Aulagromyza orphana	1
Aulagromyza similis	1
Cerodontha biseta	1
Cerodontha capitata	1
Cerodontha lateralis	1
Cerodontha phragmitidis	1
Chromatomyia blackstoniae	1
Chromatomyia periclymeni	1
Galiomyza morio	1
Galiomyza violiphaga	1
Liriomyza cicerina	1
Liriomyza orbona	1
Liriomyza taraxaci	1
Napomyza lateralis	1
Ophiomyia maura	1
Ophiomyia pulicaria	1
Phytomyza aconiti	1
Phytomyza fallaciosa	1
Phytomyza flavicornis	1
Phytomyza origani	1
Phytomyza pastinacae	1
Phytomyza pullula	1
Phytomyza rufipes	1
Phytomyza solidaginis	1
Phytomyza spinaciae	1
Phytomyza tanaceti	1
Phytomyza vitalbae	1
Phytomyza wahlgreni	1

One species which is not in the above list is *Phytomyza phillyreae*, which was added to the British list by Andy & Melissa Banthorpe in April 2018. They write;

"Our most exciting Agromyzid find this year came in April. My wife Melissa and I were wandering round the churchyard in Barton-le-Clay, Bedfordshire vc30, on 21st April 2018 when we came across leaf-mines in the leaves of a tree that we did not recognise. They resembled Agromyzid mines so we took two home to work out what we had. Melissa managed to identify the tree as *Phillyrea latifolia*, also known as Mock Privet. This is an evergreen tree native to the Mediterranean area.

With that information I used the Dutch plant parasites website https://bladmineerders.nl to see if I could get an identification for the mine causer. The dichotomous keys took me to Phytomyza phillyreae, a known miner of the tree but not known from northern Europe. I made contact with Barry Warrington straightaway and on his advice returned to site and collected more mines. These were then carefully packaged and posted to him.

Barry processed these leaves, removing the puparia to breed through and the first male emerged on 30th April. Gendet confirmed the id as *Phytomyza phillyreae* and several more emerged over the following few days. Specimens were sent to the Natural History Museum for the national collection.

It would be worth checking other trees of this species in southern England. Mines should be looked for in spring as the mines are made then and the adults emerge soon after. The species is univoltine.

For more information see the following paper in Dipterists Digest Vol25 part 1 August 2018:-
Phytomyza phillyreae Hering in Buhr (Diptera, Agromyzidae) new to Britain
BARRY P. WARRINGTON and ANDY M. & MELISSA G. BANTHORPE

Thanks to Barry for all his work on this and getting the paper researched, written and published".

Phytomyza phillyreae mine © Barry P Warrington

This record just shows that there is still so much to discover and by getting out there and looking, anyone could make fantastic discoveries like this!

iRecord is an extremely valuable resource and is really helping to put 'dots on maps'. The verification process appears to be well received by most users but please do get in touch if you have any suggestions which you think would improve the process.

The NRS would like to thank Martin Harvey at the Biological Records Centre for all his help during the past twelve months with the issues encountered.

Finally, thank you to all the iRecord users who are providing their data to the NRS.

RECORDS FROM OTHER SOURCES

INDIVIDUALS AND LERC'S

Many records were submitted directly to the NRS by the following;

Andrew Cunningham

Andrew Graham

Alan Outen

Charlie Fletcher

COFNOD

David Gibbs

George Reiss

Graham Featherstone

Greater Manchester Ecology Unit

Highlands Biological Recording Group

Jenny Seawright

John Coldwell

John Drewett

Keith Alexander

Malcolm Storey

Mike Paskin

Paul Cobb

Rob Edmunds

Seth Gibson

Sir Professor Charles Godfray

W Dolling

A massive thank you to all of the above for submitting their records directly to the NRS.

In total, the above contributors added an additional c5,000 records to the national database, with many of these been records of collected and dissected adults.

The thought of collecting, rearing and dissecting adult material still fills many a recorder with fear but if anyone is considering looking at adults, please do get in touch and the NRS will be delighted to help in any way it can.

TARGET SPECIES FOR 2019

NON-LEAF MINING AGROMYZID'S

There are many species of Agromyzidae which do not create leaf-mines but feed in other parts of the plant, such as the roots, seeds and stems.

One genus in particular, *Melanagromyza*, are stem-borers and this time of year is an ideal opportunity to look for their puparia in the stems of various plants.

At present, there are only 230 records for this genus in the NRS database, which represents just 0.7% of the total records!

In many cases, rearing of adult material is essential to allow a definite determination, however, this is usually straightforward and really is worth the effort!

The January newsletter will discuss these in more detail, along with several other species to look out for during the upcoming season.

Puparium of *Melanagromyza lappae* in Burdock stem © Barry P Warrington

WINNERS AND LOSERS

HOW SOME SPECIES FARED……

The number of records for a handful of species increased drastically during the period, compared to the previous years figures, whilst naturally, there were also a few losers.

It is hard to be sure if these fluctuations are due to genuine rises (or falls) in population or whether an increase in awareness is the cause, or indeed a combination of the two.

The biggest 'winner' during the year was *Aulagromyza tremulae*, a species which mines Aspen, with records increasing by 550%, closely followed by the Laburnum miner *Phytomyza cytisi*, who's records increased by 500%.

Mines of *Aulagromyza tremulae* © Barry P Warrington

Other species to have had a much better year include *Agromyza nigrescens* (↑ 240%), *Aulagromyza heringii* (↑160%), *Aulagromyza populicola* (↑ 400%), *Cerodontha iraeos* (↑ 121%) and *Phytomyza aquilegiae* (↑ 185%).

From the above species, only *Aulagromyza tremulae* and *Aulagromyza heringii* were mentioned as 'species to look out for' by the NRS.

The Agromyzid which fared the worst during 2018 compared to records received for 2017 was *Agromyza ferruginosa*, a miner of Comfrey (*Symphytum*) and Lungwort (*Pulmonaria*), with not a single record been received. *Agromyza alnibetulae* (↓ 24%), *Amauromyza verbasci* (↓ 28%), *Phytomyza conyzae* (↓ 38%) and surprisingly, *Phytomyza ilicis* (↓ 23%) were also poorly recorded during 2018.

Each year that passes will allow a much more accurate understanding in terms of distribution and population trends so please do keep sending in your records, even for good old *Phytomyza ilicis*, as every one is extremely valuable.

The *Provisional Assessment of the Status of Acalyptratae flies in the UK* was published in December 2016, just prior to the NRS been launched.

In the assessment, only two species were accorded conservation status (*Phytoliriomyza ornata* and *Phytomyza orobanchia*), this been due to a lack of available data which permitted distribution and conservation status to be clarified for all species. With the inception of the NRS, hopefully a more detailed assessment can be commissioned in the future.

SOCIAL MEDIA

TWITTER STILL A POPULAR POINT OF CONTACT

Currently, the NRS Twitter account has 378 followers, many of which prefer to contact the NRS via this medium.

During the year, over 400 tweets were sent, covering subjects such as replying to ID queries, advising of species to look out for and answering Vice County record requests. Tweets which highlight specific species to look out for are always popular and often result in a surge in records of that particular species.

Earlier in the year, the NRS made people aware of how to spot the larval signs of *Phytomyza krygeri*, a species which feeds in the seed pods of Columbine (Aquilegia). At the time, there were only three records of this species in the NRS database, yet within a couple of days of posting the message, 11 records were submitted, all being new Vice County records.

Larval signs of *Phytomyza krygeri* © Barry P Warrington

The same level of response was achieved when the mines of *Liriomyza pusilla* on Daisy were pictured and discussed.

Larval mines of *Liriomyza pusilla* © Barry P Warrington

In 2019, the NRS will continue to send out messages to make people aware of what to look out for. Hopefully, these will keep resulting in a rush of records for each species covered!

During the year, in total, over 500 ID requests were sent into the NRS, by email or Twitter. All of these were answered extremely promptly, which hopefully was appreciated by all.

Social media was also used to publicise the *Host Plant Genera of the British Agromyzidae* provisional checklist. The checklist has been distributed to over 70 people, ranging from amateur naturalists in Jesmond to Molecular Scientists in Japan.

The checklist will be updated periodically, as new host plants and Agromyzidae species are regularly discovered.

FEEDBACK AND SUGGESTIONS

GET IN TOUCH!

The NRS would love to hear any suggestions you may have; be that relating to the verification process, newsletter ideas or something else.

Unfortunately, the NRS website has not progressed as much as it was hoped, the amount of time needed to work on this is substantial. However, over time, the website will be enhanced and be a valuable resource to those interested in the Agromyzidae.

Finally, as always, a big thank you to everyone who has and continues to contribute to the NRS – keep up the good work folks!

CONTACT

IF YOU HAVE ANY QUESTIONS OR WOULD LIKE TO KNOW MORE ABOUT THE SCHEME, PLEASE DO GET IN TOUCH WITH US;

@AgromyzidaeRS

agromyzidaeRS@gmail.com

Anthomyiidae Recording Scheme

Newsletter No 11

Spring 2019

Introduction

By the time you read this, the collecting season for Anthomyiidae could be well under way. This edition includes three items held over from the Autumn 2018 edition so that they have become more topical again. They concern genera which are particularly suited to a targeted search because of specific plant or host associations. Records and reports from later in 2018 are only just starting to trickle in, so the rest of the newsletter covers some identification issues that have arisen from the February 2018 workshop and from the verification backlog on IRECORD.

An *Egle* bonanza

There are currently 12 species of *Egle* on the British list. All except one of these are associated with willow (*Salix* sp.). They are medium to small dark Anthomyiids but the genus is reasonably easy to identify from the protruding edge of the mouth and long proboscis in most species, an adaptation to flower-feeding. The eggs are also laid on the female catkins where the larvae feed in the developing seed and eventually drop to the ground to pupate until the cycle recommences in the following spring.

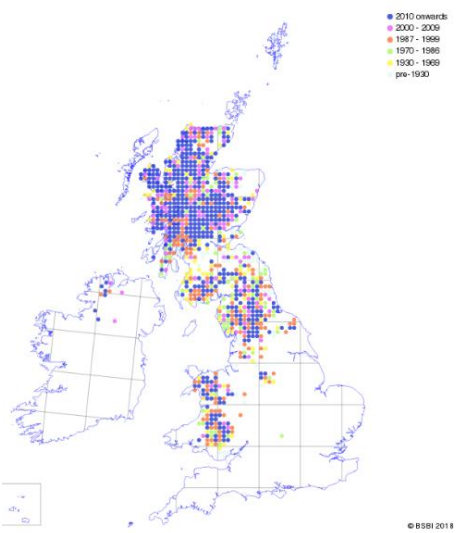
So these are a good subject for a targeted search early in the season when the adults can be swept from willows and can also be found basking in the sun on wooden structures. In a paper submitted for the next *Dipterists Digest* Nigel Jones says that for him "a good day *Egle* hunting heralds the beginning of a new season for Diptera and is something looked forward to with great anticipation". Normally he captures a few specimens of one or two species, but 9 April 2018 at Venus Pool in Shropshire (SJ5406) was very different with a tally of 60 specimens and 8 species. Investigation of the recording scheme database shows this to be a record for a single site in a single day, though similar assemblages have been found over a period of time in small areas around Oxford and in South Yorkshire. Given these widely separated locations, it seems likely that a similar range of species could be found anywhere in the lowlands with willows in the right weather conditions. Nigel's article contains some useful tips on collection and identification of the genus.

I had some success myself with a targeted *Egle* search on the dune slacks at Birkdale Green Beach (SD3013) on 15 April 2018. *Egle brevicornis* is a nationally scarce species particularly associated with creeping willow (*Salix repens*) on coastal dune systems. It is relatively large for *Egle* and similar to the common *E. ciliata*, but distinguished from it by the stiletto-like process on the cercal plate and a generally less hairy overall appearance. My *Egle* hunt yielded a total of 22 specimens with 11 *E. brevicornis* and three other common species. *E. brevicornis* has not previously been recorded in Britain north of Anglesey according to the NBN Atlas.

A *Chiastocheta* quest

One of the particularly intriguing Anthomyiid genera is *Chiastocheta*. There are seven European species of five have been recorded in the UK, and like most of the *Egle* species they all both pollinate and feed on a specific plant – in this case *Trollius europaeus*, the globe-flower. Indeed it has been suggested that the form of these flowers has evolved to shelter the adult flies.

Trollius is an upland plant of damp pastures, which is declining in Britain and elsewhere in Europe (Suchan *et al.*, 2015). The maps show the BSBI's time-layered records of the plant and the distribution of the 54 records of genus *Chiastocheta* from the NBN Atlas. The North of England records are almost all the 1930s, when *C. trollii* could be collected in great numbers wherever the flower was found (Cheetham, 1933).



This certainly seemed a high priority for a new search. The Lancashire Environment Records Network (LERN) kindly gave me details of modern records of *Trollius*, from which the most accessible location seemed to be Standridge Pasture SSSI in the Forest of Bowland near Slaidburn (SD7353). Rob Zloch and I met there on 6 June: it took a while to locate the flowers on the lower parts of the north-facing slope, as they were already fading, with many reduced to seedheads. It seemed we might be too late, but we spent a couple of hours sweeping for any small black bristly flies we could find. Indeed my catch proved to contain no *Chiastocheta,* but Rob did get a few females – unfortunately these are not identifiable to species. Remembering a comment in Ref **Error! Bookmark not defined.** about how the presence of the flies had been detected, I photographed a seedhead with possible fly eggs attached: Tomasz Suchan, lead author of Ref **Error! Bookmark not defined.** kindly confirmed these were indeed eggs of *Chiastocheta.*

We hope to return to the site in mid-May 2019 in the hope of finding some males and thus determining which species are present. Sarah Robinson of Lancashire County Council has told us that two new globeflower populations have been established from Standridge seed, giving scope for investigating the dispersal capability of these flies. We thank her and David Earl of LERN for their help.

A swarm of *Leucophora*

The eight British species of *Leucophora* are all associated with the nests of hymenoptera as kleptoparasites. Several of my records have been of individual females of *Leucophora obtusa* loitering on the ground near mining bee nests early in the spring, and males have been rather infrequent. In 2016, Nigel Jones had a rather different experience – he writes as follows:

"On 15 April 2016, at Preston Montford Field Studies Centre, Shropshire, I was assisting with identification for an Open University school on pollinators. The weather was overcast and cool, not rising above 7 degrees Celsius all day: not by any means ideal for finding pollinators, but the school was limited to two days, so we had to try and find pollinators. Forced out in conditions under which I would normally never try to find flying insects, I searched around, and it was not long before I found some *Leucophora obtusa* males resting on stems and flower-heads of Teasel (Fig. 1). The more I searched, the more and more *Leucophora* I found. I collected several specimens for identification and they were all *L. obtusa*. There were probably over 100 specimens, all mostly roosting on teasel, but also a few on other upright stiff-stemmed dead plants. This was in a small area about ten metres long by a few metres wide. Nearby was some open ground, known to host nests of mining bees, doubtless the place of origination for the flies, which are well known kleptoparasites of solitary bees. Interestingly, although the flies appeared to be moribund in the cold conditions, but they often flew off when disturbed by close approach, demonstrating that they are capable of flying, without warming sunshine, at temperatures as low as 7 degrees Celsius.

"I hypothesise that these males had all emerged very recently. Males of many insects often emerge up to a few weeks before females of the same species, probably to ensure that females, on their emergence, can mate quickly. On this occasion females had probably not yet emerged and the males were left 'time stranded', awaiting the emergence of females once conditions became favourable again. A few days later when conditions were a little warmer, the roosting males appeared to be no longer present."

The Botanophila *discreta/striolata* split (or resplit)

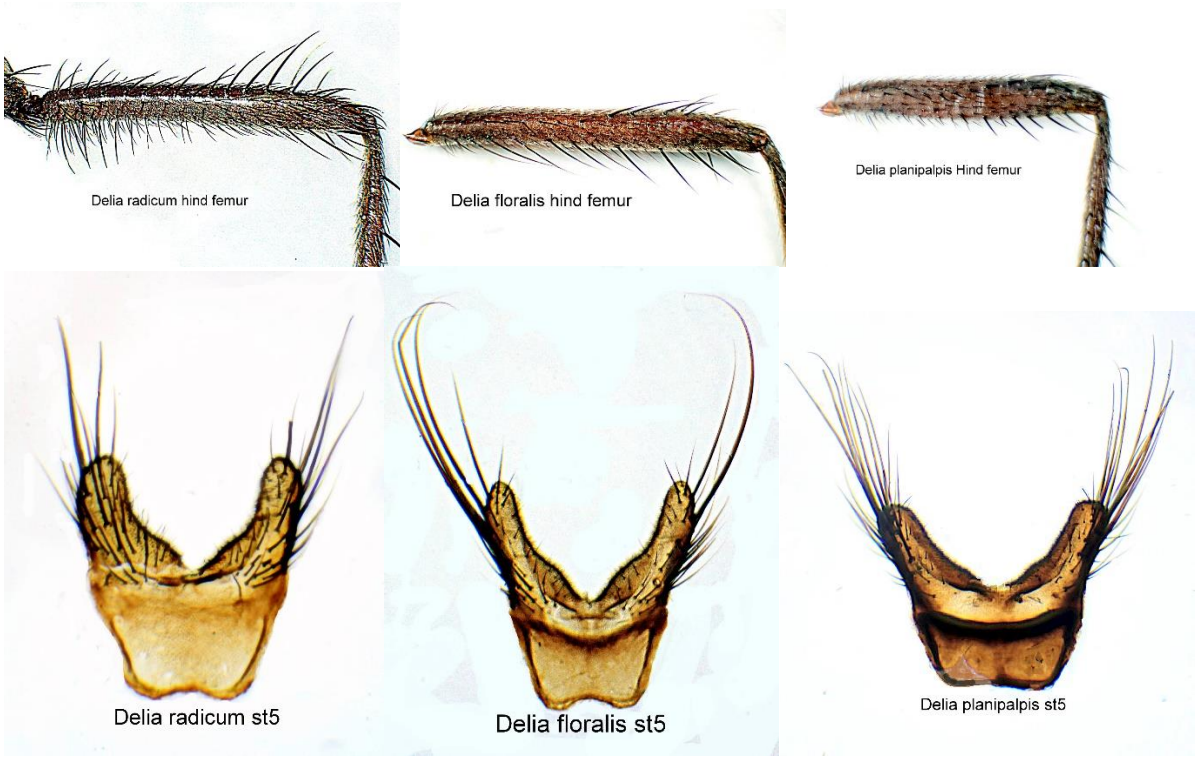
Further to this issue raised in Newsletter 10, Chris Raper, as manager of the UK Species Inventory at the Natural History Museum, has now included the term *Botanophila discreta/striolata* agg. for records which cannot confidently be assigned to one or the other species. This will apply to older records where the determiner has not responded to a query in IRECORD or a specimen is not readily available for checking. Some recorders have reported specimens which seem to be intermediate when assessed against all the characters detailed in *Dipterists Digest* Vol. 20(2) p 153 and in the 2018 DF Workshop hand-out, so these can also be recorded as the aggregate – comments on the reasons for this will be helpful. I have specimens of both species from Michael Ackland and these photos show the difference in the width of the upper frons.

Botanophila discreta Meigen 1826 *Botanophila striolata* Fallén, 1824

Cabbage root-fly identification problems

We have three rather similar species of *Delia* which attack the roots of plants in the cabbage family (Brassicaceae, formerly Cruciferae): *Delia radicum* (Linnaeus, 1758); *D. floralis* (Fallén, 1824); and *D. planipalpis* (Stein, 1898). The first of these is known to gardeners as the cabbage-root fly and was placed 12th in the league table of the commonest Anthomyiidae in the last Newsletter, with 118 records on the recording scheme database. The numbers of records for the other two were in single figures.

Michael Ackland's key distinguishes *radicum* from the other two by the presence of a "dense brush" of ventral setulose hairs at the base of the hind femur on the av, v and pv surfaces. It became apparent in the recent DF Workshop that participants were doubtful about this feature, and I also received some records of the other two species from seasoned recorders, which on further consideration were renamed as *radicum.* Michael has provided some comparative photographs to augment the descriptions in the key of the hairs and bristles on the hind femora and of sternite V. In specimens of *radicum* that I have seen there has been some variation is the density of the hairs on the base of the femora but it has always been quite different from the short ciliation, with or without bristles, of the other two species.



Leaf-mining *Pegomya* species

Pegomya is our largest Anthomyiid genus, with 48 species on the British checklist, though only *P. bicolor* appears in the top twenty by number of records on the recording scheme database: it is at 14th place with 104 records. When I started the verification of Anthomyiidae on IRECORD, I found that recording of this and a few other species on the basis of leaf-mines has been quite popular, dominating the numbers of records from adult specimens. This is of course the mainstay of the Agromyzidae Recording Scheme recently started very successfully by Barry Warrington (see Newsletter in the Spring 2018 DF Bulletin). Many can be identified from the leaf-mine alone, while others may require examination of the larva or puparium, or breeding out of the adult. While there is a classic 1957 book in German by Hering, it is likely that most recorders will have used the on-line resources at http://ukflymines.co.uk/ or at http://www.leafmines.co.uk/, which covers non-diptera as well. These sources also cover the Anthomyiid leaf-miners.

Given the relative paucity of adult *Pegomya* records, leaf-mines are potentially a valuable source of extra data on distribution and phenology. Unfortunately the most frequent host plants, the docks and sorrels (*Rumex*, family Polygonaceae) are attacked by four species *P. bicolor*, *P. haemorrhoum*, *P. solennis* and *P. vanduzeei* and there seems to be no clear way of distinguishing the resulting blotch leaf-mines (see left).

The beet flies attack members of the Chenopodiaceae family which includes goosefoots (*Chenopodium*), oraches (*Atriplex*) and the common beet (*Beta vulgaris*), which has many forms including wild sea beet, garden beetroot and chard and agricultural sugar beet and mangolds. They are regarded as a significant agricultural pest. Dipterists Forum member Siobhan Hillman is currently engaged in a PhD on this subject at the University of East Anglia and writes as follows:

"The sugar beet leaf miners have a complicated taxonomic history, with little known about their biology and ecology. Past literature often refers to the sugar beet leaf miner as a single species, or a complex of two species (*Pegomya hyoscyami* and *P. betae*), but the most reliable and up to date research of the sugar beet leaf miner complex refers to them as a complex of four species; *P. hyoscyami, P. betae, P. cunicularia* and *P. exilis* (Michelsen, 1980). There are relatively few records of these species from the UK despite these leaf miners being sporadic pests of sugar beet. This is most likely due to the fact Anthomyiids are a challenging group to identify from morphological features and very little is known about these species.

"As part of my PhD we are aiming to identify the exact number of species within this leaf-mining complex, with reference to the morphological features and comparative DNA analyses between any potential species. We will also be investigating life history traits and the effect these leaf-miners have on their host plants. Within the UK there is little information on the exact distribution range of these *Pegomya* species which may be due to the fact that the host plant range of these leaf miners is currently undetermined, as there are relatively poor historic records of host plant species associated with them. We will therefore be investigating the host plant association of these leaf miners, as well as the current distribution of these species within the UK. Additionally to this, we will be identifying any associated parasitoids associated with these Anthomyiid flies, and how they might vary between regions and between species."

Siobhan has asked for material for this analysis from across the UK. I thought I had struck gold when I saw these leaf mines in a goosefoot-like plant on Birkdale beach (SD2913) on 31 May this year and swept large numbers of a bristly grey and orange fly; but they turned out to be the Sciomyzid *Pherbellia dubia*! Siobhan is also interested in the entire genus and so samples of any Pegomya species would be much appreciated: please contact her at Siobhan.Hillman@uea.ac.uk

I am asking recorders of leaf-mines in the dock and beet plant groups to put them on IRECORD simply as *Pegomya* with details of the host plant, and the life stage specified as "other" so that they can be filtered out and analysed in due course.

There are a few other *Pegomya* species which have been recorded to species from leaf-mines: on burdocks (*Arctium* sp.) there is a single *Pegomya* leaf-miner, *P. laticornis* and the mines are readily distinguished from those of other diptera and non-diptera; the same situation prevails with thistles (*Cirsium* sp.) and *P. steini*, but caution is required as the Agromyzids *Phytomyza cirsii* and *Ph. autumnalis/spinaciae* can cause similar mines, especially if rather compacted; finally, the leaf-mines of *P. flavifrons* on the Caryophyllaceae such as campions and chickweeds are not clearly differentiated from those of the Agromyzid *Amauromyza flavifrons*, but the families can be

separated by examination of the larval mouthparts. Also the larva of *P. flavifrons* is distinguished by the strange habit of retaining the frass within its body.

I am indebted to Barry Warrington, Julian Small and Rob Edmunds for their advice on identification from leaf-mines and the associated larvae.

…and finally, a remarkable coincidence

In May, Andrew Graham sent me an e-mail about a recent find of two scarce Anthomyiids: *Botanophila sanctimarci* and *Pegomya rugulosa.* These were both first records for Wales (SJ25, VC50) of these nationally scarce species. *B. sanctimarci* is strongly associated with wild garlic, and so another good subject for a targeted search in late April or early May.

A day or two later, I was astounded to find *Pegomya rugulosa* myself in a batch of specimens from a wooded clough on the Smithills estate (SD61, VC59), the extensive upland area near Bolton recently taken over by the Woodland Trust. While *B. sanctimarci* is a southern species, *P. rugulosa* is a predominantly Scottish one with only a few previous English records. It is a robust fly with distinctive processes on the male sternite V, as seen in the photos below. It belongs to the *Pegomya* subgenus *Phoraea* which is associated with fungi. We can only speculate that this was a particularly good year for a species which has previously largely escaped detection south of the border: the Scottish records are mainly from late May to mid-June, so a southwards migration seems unlikely.

These photos are both from Janet Graham's flickr site

https://www.flickr.com/photos/149164524@N06/28125466068/in/photostream/

where many other wonderful pictures of diptera and other insects are to be found.

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Phil Brighton

Hoverfly Newsletter
Number 65
Spring 2019
ISSN 1358-5029

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

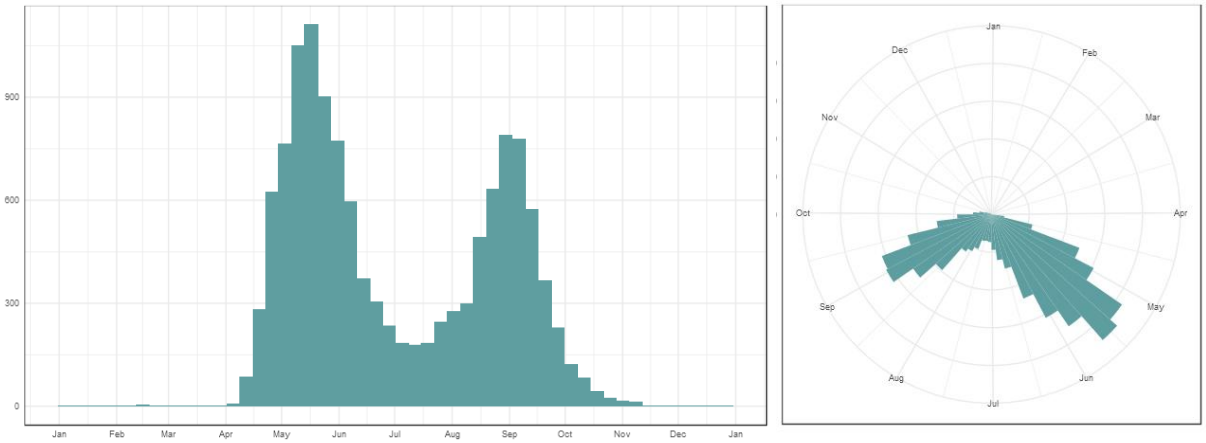
e-mail: syrphidae10@gmail.com

Hoverfly phenology plots

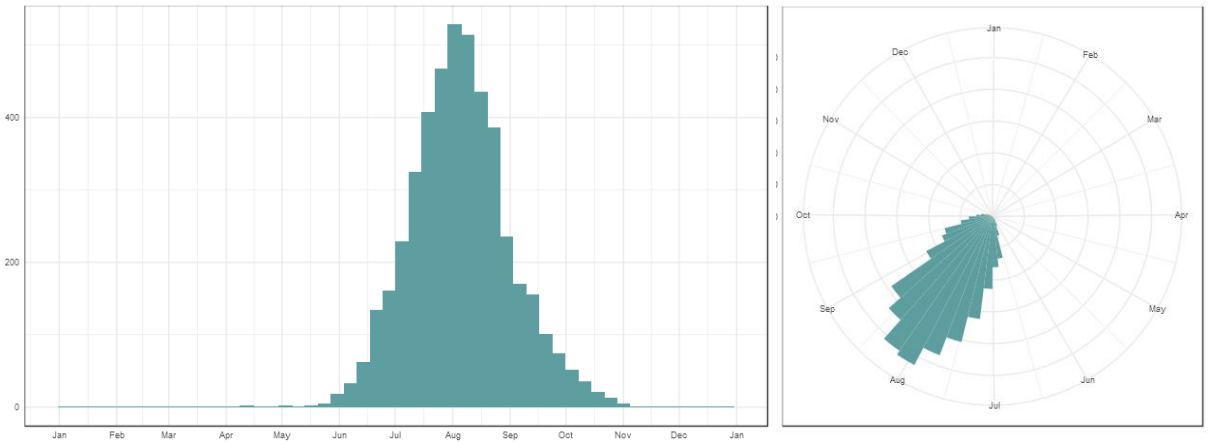
Stuart Ball

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!

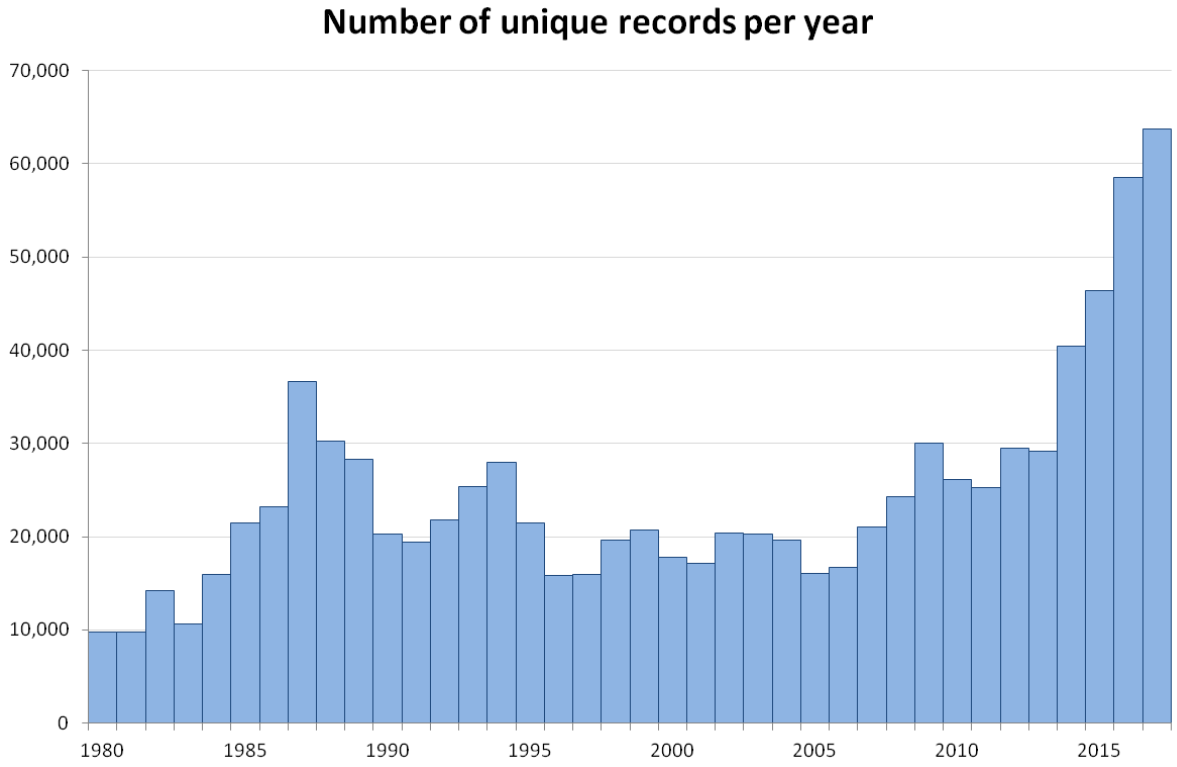


Figure 1 Numbers of 'unique' records per year. This calculation strips out most of the duplicated records that inevitably have crept into the dataset.

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?

Roger Morris
c/o 241 Commonside East, Mitcham, Surrey CR4 1HB
syrphid58@gmail.com

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.

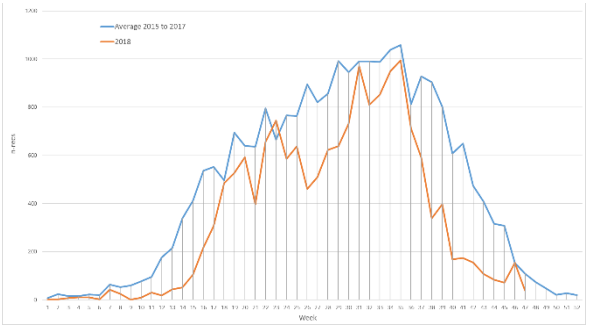


Figure 1. Number of records per week in 2018 set against the three-year average of records extracted from Facebook and other social media. Overall numbers of records extracted in 2018 are lower than average because a substantial number of our most assiduous recorders have switched to maintaining a spreadsheet.

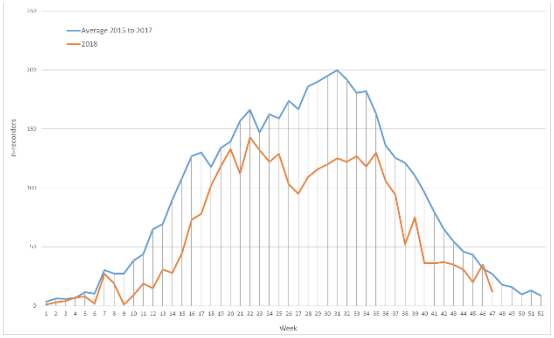


Figure 2. Numbers of contributors to data extracted from social media in 2018 compared with the average for the previous 3 years.

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.

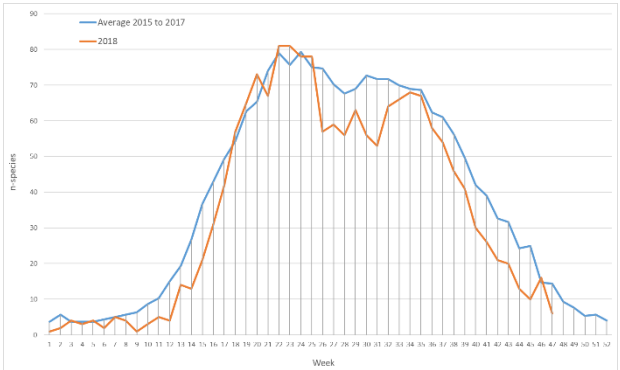


Figure 3. Numbers of species recorded via social media in 2017 and 2018.

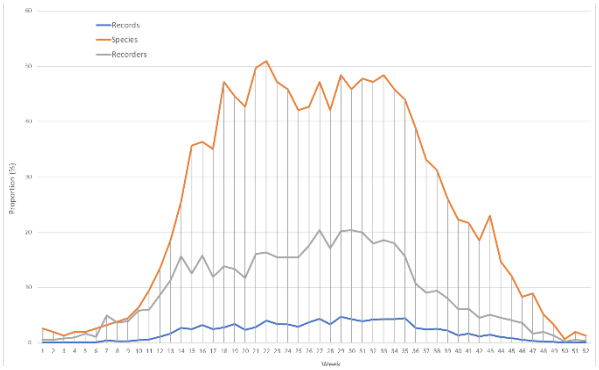


Figure 4. Weekly proportions of records, species and recorders in 2017.

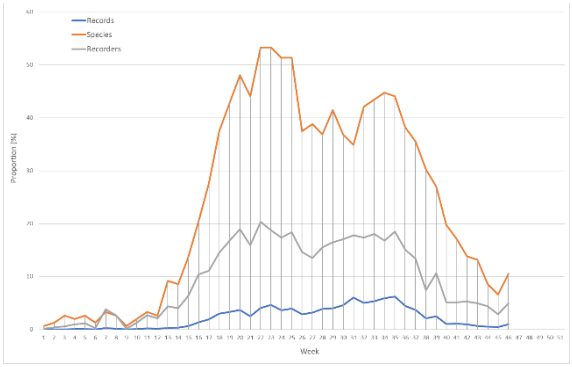


Figure 5. Weekly proportions of records, species and recorders in 2018.

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.

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Impact of extreme weather – species responses

Roger Morris
c/o 241 Commonside East, Mitcham, Surrey CR4 1HB
syrphid58@gmail.com

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.

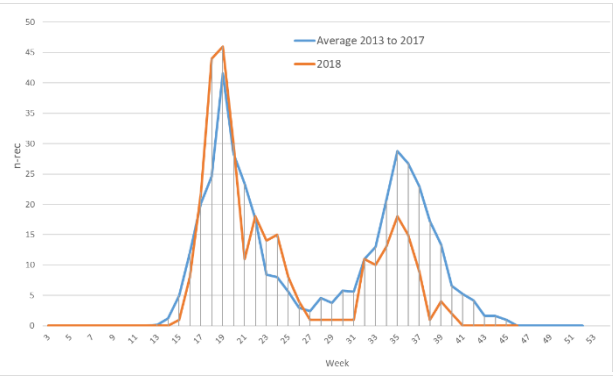

Figure 1. Records of *Rhingia campestris* from social media in 2018 compared against the preceding 3-year average from the same origins.

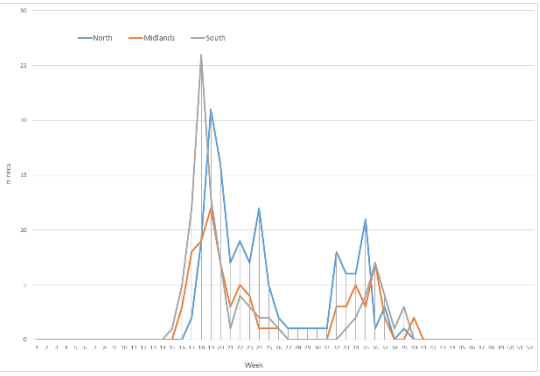

Figure 2. Records of *Rhingia campestris* from social media in 2018 from three regions of Great Britain. Note that it is only in the northernmost region that there appears to be continuity between the spring and summer generations.

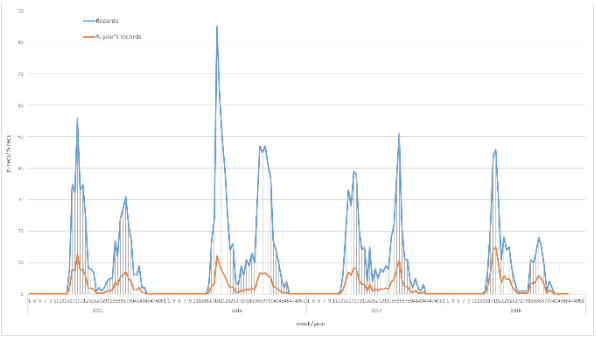

Figure 3. Comparison between 2018 data for *Rhingia campestris* and those for the preceding 3 years. Weekly totals have also been presented as the proportion of the year's records to take account of differing numbers of records in each year.

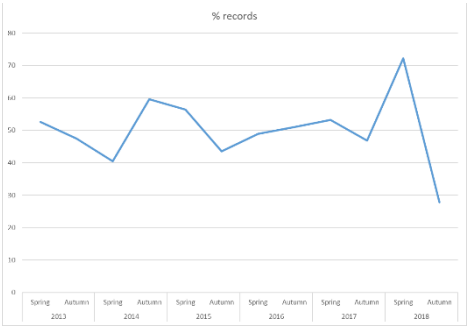

Figure 4. Spring and summer generations of *Rhingia campestris* presented as proportions of the year's total records for the species from 2013 to 2018 i.e. the main run of data extracted from social media. The trend for the full 6 years is flat, but the summer generation in 2018 is substantially below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

References

Laurence, B.R., 1948. Abundance and Scarcity of *Rhingia campestris* Mg. (Dipt., Syrphidae). *Entomologist's Record & Journal of Variation* **60**: 100-101.

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

David Iliff
Green Willows, Station Road, Woodamncote, Cheltenham, Gloucestershire davidiliff@talk21.com

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)

Geoff Wilkinson, North East Scotland Biological Records Centre, Woodhill House, Westburn Road, Aberdeen, AB16 5GB.

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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Gemmell, L., Hancock, E.G., and Robinson, J. 2011. A second Scottish record of *Mallota cimbiciformis* (Fallen) (Diptera, Syrphidae).

Rotheray, G.E. 1990. Larval and puparial records of some hoverflies associated with dead wood (Diptera, Syrphidae). Dipterists Digest. 7: 2-7.

Rotheray, G.E. 1993. Colour guide to Hoverfly Larvae (Diptera, Syrphidae) in Britain and Europe. Dipterists Digest. 9: 1-155.

Figure 1: *Mallota cimbiciformis* adult

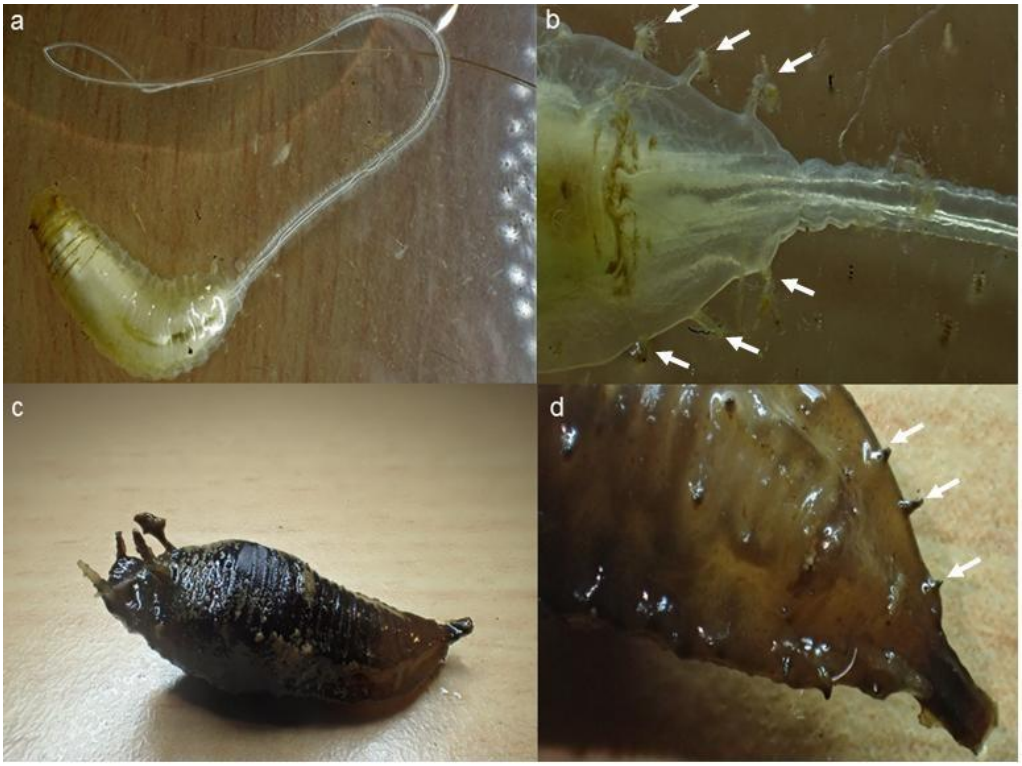


Figure 2. a) dorsal view of whole larva. **b)** ventral view of larval anal segment bearing three pairs of fleshy projections. **c)** lateral view of puparia with "tail" broken off. **d)** ventral view of puparia with anal segment bearing three projections

Photos: Geoff Wilkinson

Putting to rest *Cheilosia nigripes* records in Yorkshire

Joan Childs
waterpipit@live.co.uk

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*

Joan Childs
waterpipit@live.co.uk

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

Roger Morris
c/o 241 Commonside East, Mitcham, Surrey CR4 1HB
syrphid58@gmail.com

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

Roger Morris
c/o 241 Commonside East, Mitcham, Surrey CR4 1HB
syrphid58@gmail.com

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*

Anthony F. Bainbridge
6 Greenhill Place, Codford, Wiltshire BA12 0DT afbainbridge@gmail.com

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

Anthony F. Bainbridge
6 Greenhill Place, Codford, Wiltshire BA12 0DT afbainbridge@gmail.com

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)

Soldierflies and Allies Recording Scheme

Newsletter 6, spring 2019

Edited by Martin C. Harvey
ISSN 2053-471X (print)
ISSN 2053-4728 (online)

The hunchback fly Acrocera sanguinea *from Jersey. This species is widespread on the continent but this is the first record that we are aware of for the Channel Islands. Recorded and photographed by Simon Robson .*

Welcome to the spring 2019 newsletter.

This edition contains news of bee-flies (Martin Matthews and John Phillips, page 2; bee-fly watch, page 4; return of the Anthracite Bee-fly, page 5), horseflies (new guide from France, taxonomic puzzles, page 3; Joe Beale late observation, page 5), robberflies (Jann Billker's work on the Oxford collections, page 4) plus recording scheme news and publications updates.

Many thanks to everyone who has contributed records, photos and articles. May you have a successful year for soldierflies and allies in 2019!

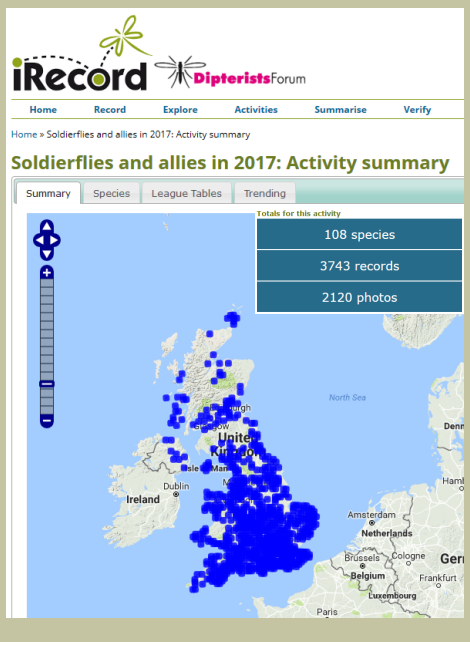
Martin Harvey

Records welcome

The recording scheme can only function if people send in their records – please continue to do so if you are a regular recorder, and if you haven't yet sent any in now is a good time to join in! Even if you are just starting off with your first Dark-edged Bee-fly record it all helps build up our knowledge of what these species do.

- Information on recording: www.brc.ac.uk/soldierflies-and-allies/records
- Soldierflies records on iRecord: www.brc.ac.uk/irecord/activities/summary?group_id=350&implicit=
- Identification information: www.brc.ac.uk/soldierflies-and-allies/resources

Thanks to the Biological Records Centre for supporting the recording scheme website.



An intriguing clear-winged bee-fly

by Martin Matthews and John Phillips (Gloucestershire Diptera Recorders)

In April 2018 a possible sighting of *Bombylius canescens* (Western Bee-fly) was reported by John and Carol Taylor from Coombe Hill Canal, a Gloucestershire Wildlife Trust reserve in the Severn Valley, not far from Cheltenham. The date (22 April) seemed rather early and the location was a surprise as recent Gloucestershire records of this species have all been from the Forest of Dean area.

Fortunately the fly had been photographed and it was possible to compare its appearance with the features described in *British Soldierflies and their Allies* (Stubbs and Drake; 2nd edition 2014). Also, one of us (JP) is acquainted with *B. canescens* and has photographed it himself near his home.

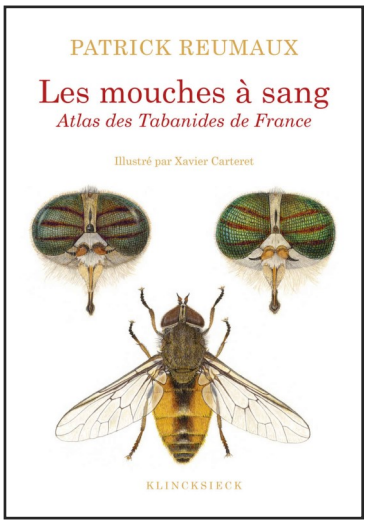
At first glance the fly in the photo did seem to be *canescens*, with its distinctively clear wings, but we didn't think it looked quite right so we asked Martin Harvey for his opinion. Martin responded that the Coombe Hill bee-fly: "… is a *Bombylius major* that is either very teneral, or is a weird variety lacking in pigment. You can just about make out the outline of where the dark shading would normally be, plus the head is too large for *canescens*. An intriguing observation!"

The occurrence of such a clear-winged *B. major* seems to be quite unusual; it would be interesting to know if similar examples have been seen by other observers.

- Top: a 'normal' *Bombylius major* (photo by Martin Matthews)
- Middle: the pale-winged *Bombylius major* (photo by John and Carol Taylor)
- Bottom: *Bombylius canescens* for comparison (photo by John Phillips)

New book on French horseflies

- Reumaux, R. 2018. *Les mouches à sang: Atlas des tabanides de France (genres Therioplectes, Hybomitra, Atylotus, Tabanus, Glaucops, Dasyrhamphis)*. Klincksieck. [c. £25 from UK booksellers]



This book on French 'blood flies' has keys, species accounts and distribution maps for six of the genera in family Tabanidae, three of which occur in Britain. My own knowledge of the French language is sadly lacking, and I have not yet had a chance to make use of Google translate to test out any parts of the keys. But one thing that is obvious is that the book is beautifully illustrated by Xavier Carteret, with plates showing the whole flies and in many cases the colourful eye patterns that are apparent in the living insects.

This is probably not an essential purchase for the British dipterist, but it adds to the available resources for these flies. The publisher's website laments the fact that there were no other books on French Tabanidae in print "in spite of the number, the size, the beauty (or the horror)" associated with horseflies. This book provides useful information on some fascinating flies, with illustrations that make the case for their beauty.

Hybomitra taxonomy

A recent paper by Theo Zeegers puts forward the argument that the species we currently refer to as "*Hybomitra ciureai* (Séguy, 1937)" (Levels Yellow-horned Horsefly) should be synonymised with the name *Hybomitra solstitialis* (Meigen, 1820). And the species we currently refer to as "*Hybomitra solstitialis* (Meigen, 1820)" (Scarce Forest Horsefly) should be regarded as a pale form of *Hybomitra bimaculata* (Macquart, 1826). This view has not been met with unanimous agreement by British dipterists; Meigen's type specimen for *Hybomitra solstitialis* does not accord with the UK concept of *H. ciureai* (Andrew Grayson pers. comm.) and the taxon we currently call "*Hybomitra solstitialis* (Meigen, 1820)" does seem to be consistently different to *bimaculata* in the UK at least, and to have a rather different ecology (Steven Falk pers. comm.). More research into horsefly variation and species limits across Europe is needed to address the challenges of this difficult genus.

- Zeegers, T. 2018. A new synonymy in the horsefly genus *Hybomitra* (Diptera: Tabanidae). *Nederlandse Faunistische Mededelingen* **50**: 89–92.

Soldierflies and allies publications

The following articles and notes have appeared in the two most recent issues of *Dipterists Digest*.

- Grayson, A. 2018. *Atylotus plebeius* (Fallén) (Diptera, Tabanidae) in Britain, including discoveries made during 2018. *Dipterists Digest* **25**: 99–103. [Details the first records since 1999 of this species, from Cheshire – a very welcome report for conservation of this rare species.]
- Harvey, M.C. 2018. *Eupachygaster tarsalis* (Zetterstedt) (Diptera, Stratiomyidae) in Berkshire (V.C. 22). *Dipterists Digest* **25**: 104. [First county record since 1998.]
- Shuttleworth, A. 2017. *Chorisops nagatomii* Rozkošný (Diptera, Stratiomyidae) new to Scotland. *Dipterists Digest* **24**: 224.

At the 2018 Dipterists Forum annual meeting Judy Webb gave an excellent talk on "Soldierflies and Horseflies of the Oxfordshire fens". Judy's notes and some photos are available to download from her website at judithwebb.weebly.com (scroll down to the entry for 10 November 2018).

Robberfly records from the Oxford Natural History Museum

by Jann Billker

Jann at work in the Oxford Museum of Natural History

As part of my Bronze Duke of Edinburgh Award in 2017/18, I decided to volunteer in the collections of the Oxford University Natural History Museum. Over the period of about a year I frequently visited the museum after school to identify the British unidentified specimens of Asilidae from the Westwood Room. The Asilidae are one of my favourite groups and I had about 190 specimens to identify and also to gather the data from their labels to sort them correctly.

I began with identifying the specimens and found some to be too damaged to be identified, others without sufficient data and some had already been identified previously. Some specimens were difficult and if I was unsure whether I had correctly identified a specimen, I asked John Ismay, who would confirm it for me. After I had the specimens identified, I entered all of the data into a spreadsheet. And this was in fact the most difficult part, because the handwriting on the labels was often very difficult to read. In order to help find the place names I used the Ordnance Survey Gazetteer of Great Britain.

In total, I have assigned 168 specimen into 16 different species. Once I had finished entering all the data, I sorted all of the flies into their respective species boxes. Finally, Zoë Simmons, the collections manager, kindly gave me permission to send the Asilidae data to the Soldierflies and Allies Recording Scheme.

I would like to thank the museum, especially Zoë Simmons, for their support and resources, as well as John and Barbara Ismay for their help with identification.

[And many thanks on behalf of the recording scheme to Jann for taking on this task and sharing the resulting records.]

Bee-fly Watch 2018

For the third year running we promoted ‘bee-fly watch’ in the spring, to encourage the recording of Dark-edged Bee-fly *Bombylius major* and Dotted Bee-fly *Bombylius discolor*. Over 1,200 records of *B. major* were sent in (about the same as in 2017), but *B. discolor* dropped back down to 67 records, about half of the number received in 2017, suggesting that it did less well this year.

In 2016 the first sighting of Dark-edged Bee-fly was reported on 13 March; in 2017 there were some very early records starting on 2 March, but in 2018 we were back to a more normal 14 March for the first record, with Dotted Bee-fly following from 3 April onwards.

To join in during 2019 please add your records to iRecord, and watch the recording scheme website for updates.

Anthracite Bee-fly returns?

In 2016 the Anthracite Bee-fly *Anthrax anthrax* was discovered in a garden in Cambridgeshire, by Rob Mills. That was the first confirmed record in the UK, following some records from 1929–30 that could not be substantiated. At the time we wondered if the new sighting would herald the wider spread of this distinctive bee-fly, but no further sightings were made in 2017. However, we now have another record, from 19 June 2018.

Anthracite Bee-fly near Canterbury (photo by Michael Woods)

This time *Anthrax anthrax* was seen just outside Canterbury, East Kent, by Michael Woods. The fly proved to be camera-shy, and Michael was only able to capture a rather blurred photo (definitely not up to his usual standard of insect photography!), but in conjunction with his description of the fly this seems very likely to be the second UK record. Once again it is from a garden. The Anthracite Bee-fly is a parasitoid of *Osmia* mason bees and other hole-nesting bees, and has been spreading on the continent, so it is definitely one to look out for next summer.

Autumnal horsefly

by Joe Beale

On 16 September 2018 I was watching Ivy Bees *Colletes hederae* around flowering ivy on the top of a suburban garden wall, near grassy open space in Blackheath, London SE3 (Royal Borough of Greenwich). I was surprised to see a male tabanid nectaring there. I observed it for several minutes and took close-up images. When home I keyed it out, using the second edition of British Soldierflies and Allies (Stubbs and Drake), as *Tabanus bromius*. I don't recall seeing this species locally before. Martin Harvey confirmed it once I had posted it on iRecord.

I am relatively new to tabanids and while I knew this was a common species in many places I understood from the book that it might be a rather late individual. In fact Martin Harvey tells me that it is the latest on record, the previous latest being 5th September 1986 in Somerset, as well as being apparently out of range (the closest populations probably being the large parks of SW London). While discussing the record on Twitter, another observer mentioned he had recorded this species the previous day, in a different region. I assume that the hot, dry weather this summer had something to do with these very late individuals and am thankful to Martin for confirming my identification and letting me know the extra information about it.

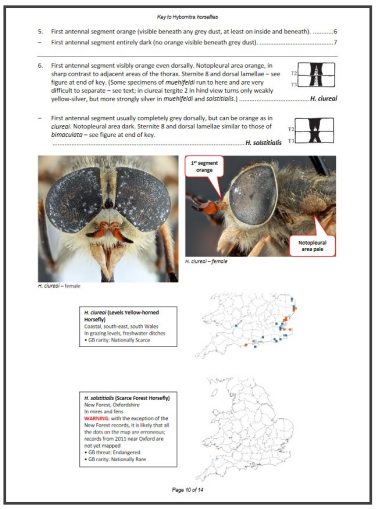
Recording scheme updates

Number of scheme organisers doubles!

Following discussions at the Dipterists Forum Preston Montford meeting last February, the recording scheme is delighted to welcome Alex Dye as an additional recording scheme organiser. Alex recently completed a Masters degree in entomology at Harper Adams, and is working as an entomologist at Rothamsted Research. For the recording scheme he has been busy helping with iRecord verification, writing articles and contributing to our Twitter activity – thanks Alex!

Training courses and resources

Soldierflies and allies were one of the focus groups at the annual Dipterists Forum workshop at Preston Montford last February, providing an opportunity to work on the trickier groups and get more familiar with a wide range of species. Some new resources were produced for this workshop, which can be downloaded from www.brc.ac.uk/soldierflies-and-allies/resources – these include:

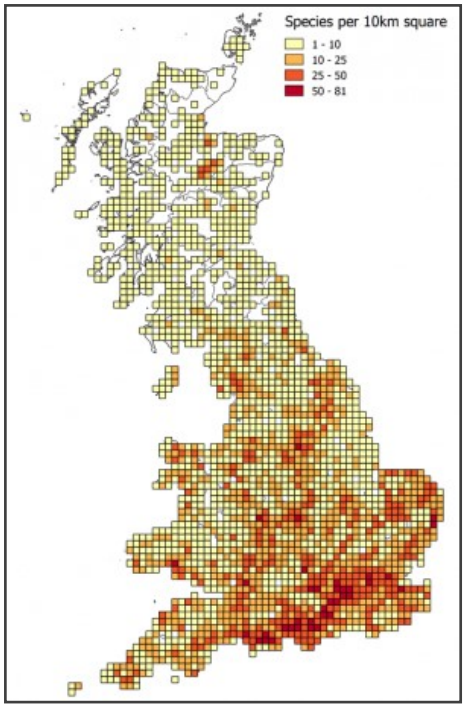


- Guide to *Chloromyia formosa* and *C. speciosa* (the latter is not thought likely to occur in Britain but could easily be overlooked if it did turn up)
- Photo guide to antennae of female *Haematopota* species (Tabanidae)
- Illustrated key to genus *Hybomitra* (Tabanidae)
- The UK species of *Thereva* stiletto flies (Diptera, Therevidae). Adapted from: Falck, M. 2011. The stiletto flies (Diptera, Therevidae) of Norway. *Norwegian Journal of Entomology* **58**, 131–163 (many thanks to Morten Falck for permission to adapt his key for UK use)

We also ran a workshop for the Tanyptera Trust at Liverpool World Museum in March 2018, and for BENHS at the Natural History Museum in January 2019.

Draft atlas available

Another outcome of the Preston Montford workshop was the compilation of a draft atlas for soldierflies and allies, updating Martin Drake's 1991 publication. This atlas includes all the data currently held in the main recording scheme database (which includes records from iRecord) up to 15 January 2018, and also shows any additional records available via the online NBN Atlas at that time (not all of which are fully verified). In total this amounts to over 150,000 records from over 3,000 people.



The main element that is missing from the draft Atlas are some of the records sent in to the scheme via spreadsheets and other formats in recent years – apologies if your records are among the backlog that is yet to be processed, and we will try to produce an updated version in the not too distant future.

The Atlas also includes brief summaries of the habitat and conservation status for each species. It can be downloaded from the scheme website at www.brc.ac.uk/soldierflies-and-allies/atlas

Social media

Don't forget that you can join in with discussion and identification assistance on Twitter and Facebook . Twitter: @SoldierfliesRS – Facebook: British Soldierflies and Allies

County Recorders

Dipterists Forum

Map themed by standard UK regions subdivided into Local Environmental Records Centre counties (see boxes)

Scotland
- Dumfries & Galloway
- Fife Nature Records
- Lothian Wildlife Information
- Glasgow
- Highlands & Islands
- North East Scotland
- unassigned
- Outer Hebrides
- Shetlands
- Orkney

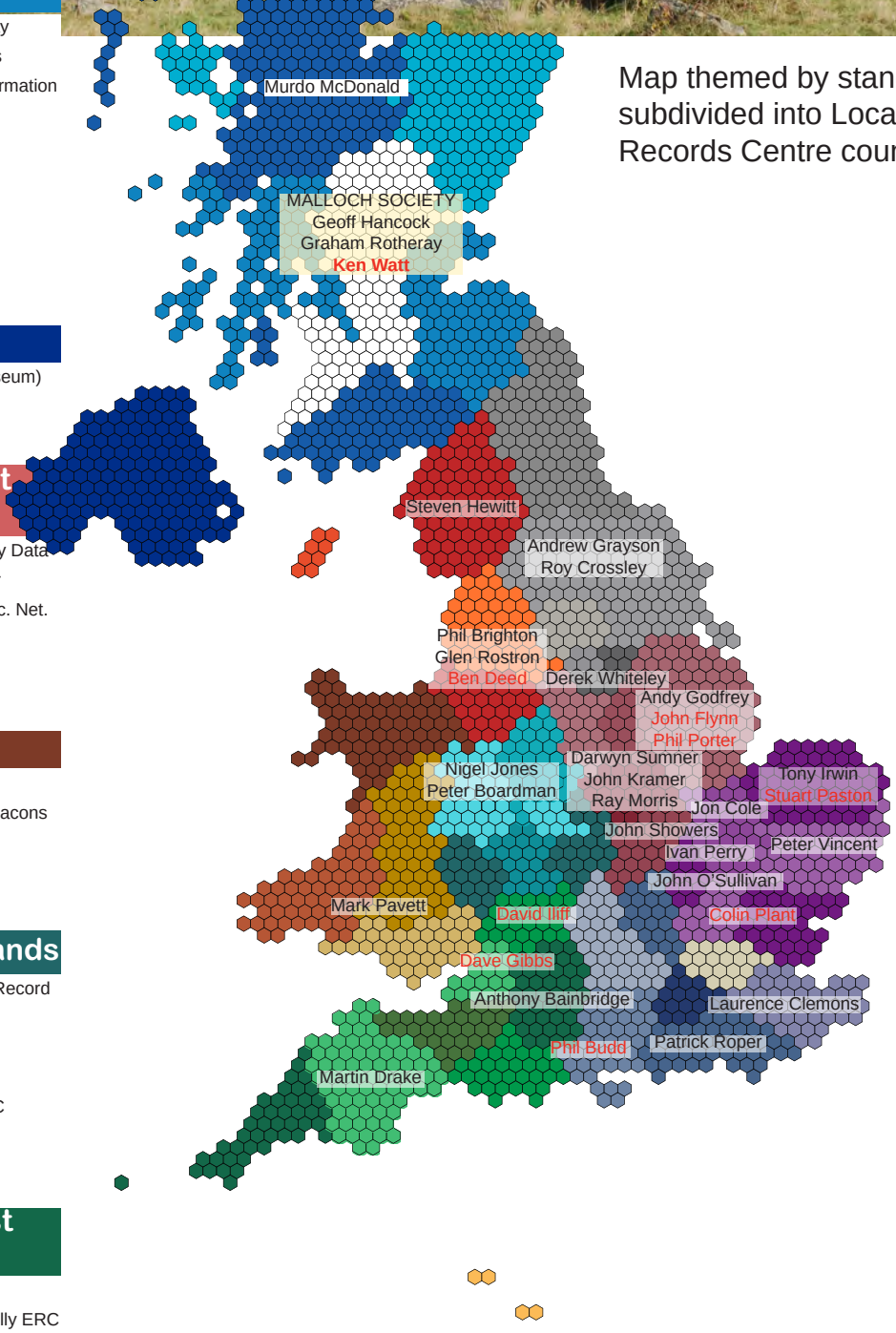
Ireland
- CEDAR (Ulster Museum)

North West England
- Cumbria Biodiversity Data
- Greater Manchester
- Lancashire Env. Rec. Net.
- Merseyside
- rECOrd
- Isle of Man

Wales
- North Wales
- Powys & Brecon Beacons
- South-East Wales
- West Wales BIC

West Midlands
- Staffordshire Ecol. Record
- EcoRecord
- Herefordshire BRC
- Warwickshire BRC
- Worcestershire BRC
- Shropshire

South West England
- Bristol ERC
- Cornwall & Isles Scilly ERC
- Devon BRC
- Dorset ERC
- Gloucestershire Centre ER
- Somerset ERC
- Wiltshire & Swindon BRC



North East England
- North & East Yorkshire
- West Yorkshire
- North East
- Rotherham, Doncaster
- Sheffield
- Barnsley

East Midlands
- Leicestershire & Rutland
- Lincolnshire
- Northamptonshire
- Nottinghamshire
- Derbyshire

East of England
- Norfolk BIS
- Bedfordshire & Luton
- Cambridgeshire, Peterboro
- Herefordshire ERC
- Essex (closed)
- Suffolk

Gtr. London
- Greenspace Info. for G.L.

South East England
- Hampshire BIC
- Thames Valley
- Kent & Medway BRC
- Surrey BIC
- Sussex BRC
- Buckinghamshire & Milton
- Isle of Wight

The Dipterists indicated have good local knowledge and work closely with their LERC. Red text = hoverflies only.

ALERC
Association of Local Environmental Records Centres

www.alerc.org.uk

A joint ALERC & Dipterists Forum project by Darwyn Sumner

Dipterists Forum Recording Schemes and Study Groups

Craneflies
Cranefly Recording Scheme
Tipuloidea & Ptychopteridae

Pete Boardman
pete.ento22@gmail.com
Newsletter: John Kramer
john.kramer@btinternet.com

Chironomids

Patrick Roper
patrick@prassociates.co.uk

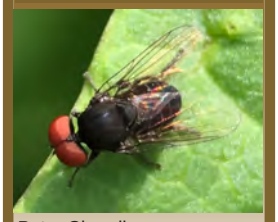
Dixidae & Thaumaleidae

Julian Small
julian.small@naturalengland.org.uk

Fungus gnats
Mycetophilidae & allies

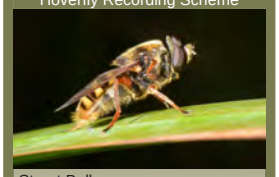
Peter Chandler
chandgnats@aol.com

Flat-footed flies
Platypezidae



Peter Chandler
chandgnats@aol.com

Hoverflies
Hoverfly Recording Scheme



Stuart Ball
stuart.ball@dsl.pipex.com
Roger Morris
roger.morris@dsl.pipex.com
Newsletter editor: David Iliff
davidiliff@talk21.com

Soldierflies
Soldierflies & allies & Recording Scheme

Martin Harvey
kitenetter@googlemail.com

Empid & Dolichopodid
Recording Scheme

Martin Drake
martindrake2@gmail.com
Steven Hewitt
smhewitt@hotmail.co.uk

Culicidae
Mosquitoes Recording Scheme

Jolyon Medlock
jolyon.medlock@hpa.org.uk

Pipunculidae
Study Group

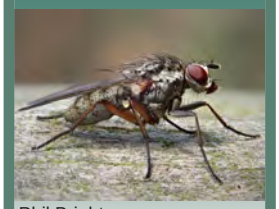
David Gibbs
DavidGibbs@Sky.com

Chloropids
Chloropidae Study Group

John & Barbara Ismay
schultmay@insectsrus.com

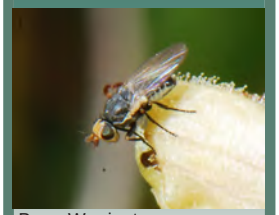
Dipterists Forum

Anthomyiids
Anthomyiidae Recording Scheme



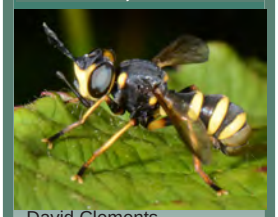
Phil Brighton
helophilus@hotmail.co.uk

Agromyzidae
Leaf-miner Recording Scheme



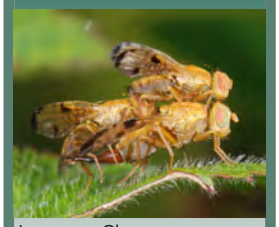
Barry Warrington
agromyzidaeRS@gmail.com

Conopids
with Lonchopteridae, Ulidiidae, Pallopteridae & Platystomatidae



David Clements
dave.clements1@ntlworld.com

Tephritids
Tephritid flies Recording Scheme

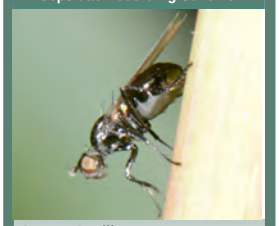


Laurence Clemons
laurenceclemons56@gmail.com

Sciomyzids
Snail-killing flies Recording Scheme

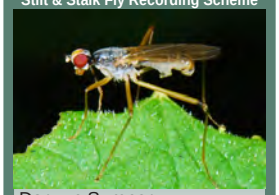
Ian McLean
ianmclean@waitrose.com
Darwyn Sumner
Darwyn.sumner@ntlworld.com

Sepsids
Sepsidae Recording Scheme



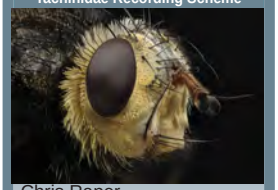
Steve Crellin
steve_crellin1@hotmail.co.uk

Micropezids Tanypezids
Stilt & Stalk Fly Recording Scheme



Darwyn Sumner
Darwyn.sumner@ntlworld.com

Tachinids
Tachinidae Recording Scheme

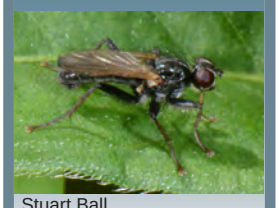


Chris Raper
chris.raper@hartslock.org.uk
Matthew Smith
MatSmith1@compuserve.com

Iconography

- Recorder 6 or earlier versions
- MapMate
- MS Excel
- iRecord
- MS Access
- GIS tools used by organisers to create maps and atlases (e.g. QGIS, DMap)
- Website available, faded icons = temporary sites
- NBN Atlas: Datasets are uploaded to publicly accessible site

Scathophagids
Scathophagid Recording Scheme

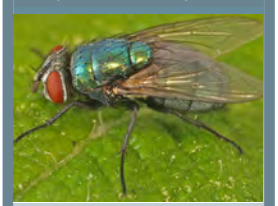


Stuart Ball
stuart.ball@dsl.pipex.com

Oestrids
Oestridae Recording Scheme

Andrew Grayson
andrewgrayson1962@live.co.uk

Calliphorids
Calliphoridae Recording Scheme



Olga Retka
aruma@wp.pl

Other recording initiatives

Recording initiatives ongoing or under consideration:

Dipterists Forum Field Weeks. Currently available on NBN Atlas

Non-recording scheme species/groups, non-native species, regional diptera groups

Download this guide as a pdf from
www.dipteristsforum.org

Photographs by John Bridges, Ian Andrews, Steve Falk, Darwyn Sumner, Alan Outen, Harry R, Chris Spilling