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Now organised by several different contributors, contact the Secretary.

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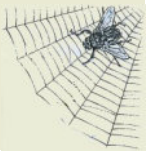


Photographs: Front cover *Conops quadrifasciatus*, **Darwyn Sumner**, above *Chrysops caecutiens*, **Ian Andrews**

Other photographs as supplied by the authors or the editorial panel who would be pleased to receive illustrations for general purposes - many thanks for those already sent. If you want to catch the next front cover, please think about the orientation, it must be upright (portrait) and have an aspect ratio of 6:7 (or be croppable to that ratio)

BULLETIN OF THE
Dipterists
Forum

Contents

Fly Sheets

Fly Ties

Contents

Hoverfly Newsletter #68 .....(4pp)
Empid & Dolichopodid Newsletter #25 .....(4pp)
Tephritid Recording Scheme 2020 .....(6pp)

Download the above Newsletters from http://www.micropezids.myspecies.info/node/344 or contact the organizers (see back page)

FEATURE: Light kit - macro flash photography (download only)
at www.micropezids.myspecies.info/node/301

Copies of this Bulletin are mailed to Dipterists Forum members.

Back issues may be obtained at www.micropezids.myspecies.info/node/301 where guide notes for potential Bulletin contributors may also be found.

Online membership is now available on our website www.dipterists.org.uk/, alternatively a membership form may be downloaded from there.

Other items such as full details of training courses, workshops and meetings may also be obtained from our website.

Desktop Publishing, Darwyn Sumner; Editorial, Darwyn Sumner & Judy Webb; Printing & distribution, Barbara & John Ismay; Mail costs, Biological Records Centre

The restless activity of large communities of men gradually despoil the face of the earth - Alexander von Humboldt

Editorial

Feedback

Vicarious dipterology

Vicarious means something along the lines of enjoying stuff through the experience of others. In that case I've had a good start to the season. In May I had a nice Scottish record of *Cnodacophora sellata*, plenty of *Neria cibaria* in Denmark, Belarus and France but Austria has been my favourite place so far with many records of *Rainieria calceata*.

Sharing records with others not so fortunate as to have good sites in their back yard is a kindness much appreciated. Recording Scheme organisers are lucky in this regard as folk will send them records directly but anyone can monitor the latest flies using iSpot, iRecord, Diptera.info and iNaturalist. Or vice-versa if you choose social media.

The top sites for getting daily diptera fixes are:

1. Hoverflies social media (and other groups)
2. Diptera.info
3. Any iNaturalist diptera project
4. Flickr users you are following

Share and enjoy.

A world first

Several recorders have been thinking about methods which would permit records outside the UK to be uploaded to GBIF. This dates back to long before the NFBR Lancaster conference on non-UK recording, the one where Steve Garland and Derek Whiteley gave their Muppets "Waldo & Statler" performance.

It came down to the European Micropezid & Tanypezid scheme and NBN's Sophie Ratcliffe to take the first steps along this road. Even as we put the finishing touches to the first upload (a 1990 Czech Republic & Slovakia baseline dataset), Sophie told me that our work had opened up opportunities for other people.

Dipterists continue to lead the way.

See **World records** and Stilt & Stalk newsletter for further information.

General news

Normally we would have picked up on a variety of news items of general interest but the media have been markedly lacking in stories. **New Scientist** had an interesting Features Interview with Gretchen Daily on 6th June. She it was who helped set up the Natural Capital Project and developed a metric GEP (Gross Ecosystem Product) to rival GDP thus thrusting conservation into the economist's decison-making formulae. But there's been nothing from Science or Nature.

Fly News has a good deal of interesting material as always. Adrian Plant tells me that he just slings on a sarong in the mornings in Thailand and there's a picture of him in his study. Lots of other stuff in there, Chris Raper is delighted with the world catalogue of Tachinidae and we both had the same reaction to pictures of wrecked malaise traps. See http://www.nadsdiptera.org/News/FlyTimes/issue64.pdf

To find anything substantial on the conservation front you'll have to backtrack to the February edition of **British Wildlife**. Peter Marren's "Will Natural England survive?" details their decline (referred to in Peter Boardman's article, wailed about elsewhere and commented upon in BW's June letters.) Add to this Miles King's piece on the legacy of recent UK politicians and the recent announcement of a relaxation of Planning rules ("*building fast and removing wildlife that presents an obstacle*" - UK's PM) and things don't look too good. Their April issue has an item by Patrick Barkham "Rewilding childhood", harkening back to a previous Marren article which prompted me back then to buy "Last Child in the Woods" by Richard Louv. Barkham tells us that today's children spend less time outdoors than convicted prisoners. The result is that today's children have "**nature deficit disorder**" and are less creative, perceptive, talkative, energetic and humorous. But, since no generation likes to think itself less enlightened than the generation before, so it goes. Take your own message from this piece, mine is to spend more effort encouraging youngsters to take an interest in what we do in Dipterists Forum. Hmm … ex biology teacher and editor of this lot; I guess I knew that already.

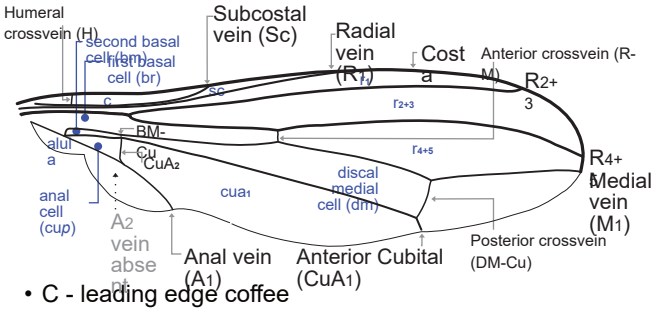
Fly yarn

Researchers at Aalto University have discovered a means of producing a weavable thread from a combination of chitin from crab shells and alginate from seaweed. So there's a lot of chitin in flies, right? Maybe one day you could be wearing your favourite Dipteran.

As if that were not enough there's also been progress in 3D printing human ears onto pigs. Extend that to humans and one day you could have real antennae, pointy ears or forehead ridges - peDoghQo' [from our Klingon correspondent]

Caffeine with wiiiings

A coffee-drinker's guide to Diptera morphology



- C - leading edge coffee
- Sc - ditto with a sandwich
- cup - reusable one for a 25p discount
- R4+5 - how many shots?!
- M1 - Motorway ones will cost a lot more
- Anal - beans passed throught the gut of a civet cat and harvested from their faeces - vile

Kate & Annie Pimeron

So long and thanks for all the lettuce

Where did all the garden snails go this year? I'm guessing they didn't like the hot dry spring. Neither did the flies. In British Wildlife's June compilation of "nature this year" Alan Stubbs commented about this fact. Quite a number of species taking up residence in temporarily wet spots such as muddy woodland ruts, runnels and small ditches, have disappeared from sight in recent years.

Wanted

Images of flies for general use. Many thanks for those already sent. **Articles** too. No-one will ever be in the same league as Alexander von Humboldt who replied to 2,000 of the 5,000+ letters per year whilst in his 80s. I get a lot of emails though, please help me allocate them by putting the word "Bulletin" in the title of the email and send them to Judy too so's she can tell me which ones I missed.

Darwyn Sumner (Editor)

Chairman's Round-up

Covid-19 has affected all of us, some more than others, if only by curtailing our dipterist pursuits, or at least forcing us to find, record and study flies in different places and in different ways. I do hope that the virus has not hit you or your families too hard. Some members will I fear have been badly impacted, and my thoughts and best wishes are with you.

From a society's perspective, it has meant we have had to postpone our spring and summer field meetings for a year, much valued and looked forward to by many of us. At least the time spent planning them has by and large not been wasted, as, with a fair wind, they will go ahead next year. As I write, the pandemic is making planning for our annual Dipterists Day and AGM difficult since it is uncertain whether it will be possible to hold them as physical meetings. Otherwise, I believe that due to the commitment of committee officers we have been able to keep the society running firmly on track. I am thankful that we don't have salaries to pay or other such financial or personnel commitments we need to meet. And we have discovered that remote (ZOOM) committee meetings work well, so much so that we have decided to hold our next summer meeting this way come what may.

As part of our response to the disease, committee members have been working out how we can cover for each other should anyone be incapacitated for a while. Really good team work for which I am hugely thankful. Personally, I am most grateful to Jane Hewitt for all the support she has given me, for acting as Vice-Chairman, and for offering to cover for me should I fall ill.

Pete Boardman has decided to stand down from committee for a while, otherwise I'm very pleased that all existing members are willing to stand for (re)election as necessary, as detailed in the AGM notice in this Bulletin. However, we very much welcome new members – please do not hesitate to put yourself forward or to nominate someone else (with their permission). We need new members to allow for succession in officer positions.

In this context, I am very pleased that Mark Welch has offered to stand for election to committee, and to take on the role of Conservation Officer. He has kindly provided relevant details of his experience and hopes in this Bulletin.

Thanks, Pete, for your time on committee and for the help you have provided. We shall look forward to welcoming you back, once work and other commitments allow.

It is very pleasing that we have a further two recording schemes or study groups to add to the long and rapidly growing list – many thanks to Nigel Jones for setting up a Lonchaeidae Study Group and Ryan Mitchell a Rhinophoridae Recording Scheme, both announced in this Bulletin. By my tally, that makes for a hugely impressive 26 groups!

Finally, our membership continues to grow, indeed there has been a surge this year with 50 new members by June. This is hugely encouraging and reflects well on our publicity and recruitment efforts, and on our super new website with its capacity for people to join direct online.

Robert Wolton

Welcome to new members

This may well be your first Bulletin. We hope you enjoy it. If you go to www.micropezids.myspecies.info/node/301 you can find our back catalogue. That's the best I can do, if you want the last 2 or 3 contact John Showers.

In the meantime there are 26 groups ranging from easy to hard to have a go at. If you have trouble understanding some and are a HitchHiker's Guide fan then stick this babel-fly in your ear - ‡ (*Editor*)

Flies as individuals

We see flies in a different light than most people, aware of their different appearances, habitat tastes and timings. Interesting specimens are pootered up or netted with a flourish and then have the benefit of our complete attention of an evening. We assess the jut of their jowls and the featheryness of their aristas, count segments and bristles, judge tarsal ratios and the route map of their venation. After spending an evening struggling with an awkward customer and an ambiguously framed key, it almost feels like you have come to know that particular fly in every possible detail.

But switch to its companion, attracted to the same dead mouse or netted from the same sallow catkins, and, unless it's the other sex, everything is the same – still four dorsocentrals, that same quirky dusting on the anepimeron, the curious sinuous bend of a vein or crazy leg hairs. They are undistinguished members of a homogeneous crowd, just another representative of their species embodying an aggregation of perverse traits that allow one, eventually, to say "That's what it is.", write out the label, file the record, and move on to the next one.

While washing the lunch dishes I spotted a Dark-edged Bee fly (*Bombylius major*, Bombyliidae) feeding at plum blossom in the garden, so I rushed out, swiped and missed it. Grumpy patrols between gardening tasks eventually turned it up again on the flowering currant. This time I got it, and since all I wanted was a picture as evidence for a record, I took it inside to pot it. But somehow, it got out, taking off at a great rate and then was gone. I rushed to close the door so that it would be confined to the room, expecting it to be drawn to the windows where I could easily catch it again. But it never appeared, and there was no sign of it high on the walls or on the ceiling where other, similarly lost flies usually go. It didn't turn up that evening or the next day - perhaps it had managed to slip out of the door before I shut it and so had escaped.

Bombylius major [D. Sumner]

The following day, after a hard spell digging up some old and unproductive gooseberry bushes that would rather have stayed put, I allowed myself some fly time after lunch. What riches! A new family with a subtle variation to familiar wing venation (*Bolitophila cinerea*, Botophilidae), a pussycat tachinid with an unknown host (*Tachina ursina*), an awkward muscid that led me astray (*Hebecnema nigra*) and a struggle after misjudging scattered eye-hairs on a syrphid (*Parasyrphus punctulatus*).

Tachina ursina [D. Sumner]

A burst of buzzing dragged me out of the microscope – there on the window ledge, legs in the air and spinning as it buzzed was the beefly, an easy pot this time. I took its picture (her picture) and offered some honey on tissue paper as an apology for having needlessly constrained her for so long. This was ignored, as was a sprig of flowering currant, and she just sat there, proboscis out, motionless. Perhaps the confinement had been too long and she was now too weak to feed, all because of my desire to put another dot on the map. I took her outside and transferred her onto the flowering currant bush, and to my great surprise instead of flying off in a hurry she stayed put. I brought some florets to the tip of her proboscis, even drew one of the pink trumpets over the tip like snuffing a candle, but still no response. I left her, fearing the worst.

An hour or so later she was still there facing away from the flowers and sitting back on her hind legs, snout up in the air, not stirring a tarsus, even when I stroked her back to remove some debris (spider web?) that was caught up in her fur. She was there at dusk and again first thing in the morning. A gentle nudge was met with a slight readjustment of a foot so she was still alive, but she held her bittern-like posture. I weeded the redcurrants nearby and checked her each time I passed back and forth but she was always statuesque, a taxidermy bee fly preserved in a characteristic pose, disdaining flowers, bumblebees and me, her only admirer. The next time I looked she was gone.

I have killed many flies, without too much ambivalence about the process, and feel no qualms when impaling their corpses or scrutinising their dessicated features. Yet I was miserable about having lost this fly, uplifted when I found her again, concerned at her lack of appetite, worried at her prospects overnight, happy to see her again in the morning, charmed by her triangular stance, in admiration of her tenacious immobility and finally relieved when she was gone, my guilt purged. When will I meet her like again?

Donald Smith

*(Donald's "Year of the Fly" blog featured in Bulletin 88. Maybe he should write a book, my suggested title, taken from his last blog there is "*The Baroque Ornamentation of its Privates*" hilarious stuff - Ed)*

Recording

The recent receipt of a sheaf of hand-written pages with numerous Sciomyzidae records is a reminder that if we are to be serious about recording then we need to be inclusive. Leaving anyone out of the recording process is not a desirable approach but in many cases it is inevitable. All the individual methods employed by the Recording Schemes exclude to some extent. The above example excludes anyone without a computer or even a typewriter. **iRecord** excludes those who dislike form-filling on a scrolling page, **iNaturalist** excludes records that aren't pictures, **biological recording software** suffers from lack of maintenance, **identification sites** are remiss for not recording, **social media** methods (one platform's motto is "*move fast and break things*") exclude those who object to them on moral principle and **other applications** fail those who simply lack the technology.

The Dipterists Forum Recording Schemes continue to cope with all these issues and to devote their efforts towards being inclusive. In the end though, the choice of recording platform is not theirs, it's the choice of the recorder themselves. If the recorder chooses to select an identification-only site, iNaturalist because no form-filling is required or spreadsheet lists from collections then it's the task of the Recording Scheme to try to reconcile all these approaches. And the function of the Bulletin to examine all these methods to help both make choices.

No "app"etite

Ken Merrifield raised the topic of the confusion of recording methodologies in a recent email to the Editor. He noted the introduction of a British Plant Gall Society "app" which he termed "*a localised version of iRecord for users in Leicestershire and Rutland*" and expressed confusion about how records are coordinated across the multiple recording applications and platforms. He continues:

> *Do they all send their records to NBN for instance, how do specialist societies like ours access the records, how are multiple entries for the same record avoided, or conversely how is it ensured that records are not overlooked or left in limbo? I know, or used to, how records centres work and liaise, but in an app driven world I am all at sea.*

Fortunately Ken copied his enquiry to **Chris Raper** too, who answered the "*broad questions which would take hours to address properly*" rather succintly, some of those comments (indented) are in the following:

Recording Methods

iNaturalist

If it is an image you are posting then this system is the easiest to use. Particularly so if you are in the habit of geotagging your images first. In that case the upload task is simply a drag and drop operation. As you can imagine that makes the record quite "data-sparse". As regards verification it is, however, the least reliable of the methods, being particularly susceptible to the Dunning-Kruger Effect (a cognitive bias).

Use of iNaturalist projects

Three UK Recording Schemes now have iNaturalist projects set up (see Recording Scheme News). Although only in place for a very short length of time, they are proving to be quite valuable. In a taxon-based iNaturalist project one simply specifies the taxonomic group and the geographical area. What happens next is that you have a page which acts as a filter for

all the records which have ever been uploaded there.

There's room for a bit of explanatory text on that page (e.g. "please consider using iRecord as well") and a pretty picture and logo.

After that you just sit back and look at pictures of flies in that group, it has a gallery of sorts. Maybe you'll be tempted to do a little identification tidying (I've rejected beetles, ants and grasshoppers from mine) but there's no pressure to do so.

It operates as a kind of community. Anyone can join in and you do tend to happen across naturalists with a similar interest. People who find one fly from the scheme and then actively go looking for more of them.

Because of the image gallery it is very valuable in encouraging recording and would be suitable for all but the larger Recording Schemes. For example Andrew Grayson is interested in it for his Oestridae Recording Scheme (he'd have to specify "World" I guess or he'd see nothing), John Kramer might have a go but he'd see thousands of records and by all accounts the Cranefly scheme is already very busy.

Good candidates would be the Conopidae and the Sciomyzidae Recording Schemes. How many images of these do you have stored but haven't bothered to upload anywhere? They're highly recognisable so there will be lots of general wildlife photographers who have snaps.

The huge advantage of iNaturalist as a system is that there is absolutely no form-filling involved. If you've put the identity in the "title" of the image's metadata and geotagged it then all you have to do is drag and drop the image onto your iNaturalist account page, a sort of "geotag-n-go". It does the rest, though admittedly the record is a basic 4 Ws and may not contain as much information as you would wish. As Charles Roper, another fan of iNaturalist, puts it "*But iRecord is still the better product for serious biological recording in the UK*" adding that the iRecord UI has "*no designers*".

That "ease of use" feature could well be the reason that many prefer iNaturalist over other systems. All UK Recording Schemes need to keep an eye on the recording that is happening on iNaturalist, their records go direct to GBIF, bypassing NBN Atlas now. So records will be missed by UK schemes unless they monitor iNaturalist and the easiest way to do that is to set up a project.

Indicia- based systems

iRecord: From a system standpoint, iRecord (i.e. the websites & apps based on the Indicia platform) and the NBN Atlas are the closest in terms of relatedness / compatibility. iRecord websites & apps feed data to storage at CEH/BRC and then this can flow seamlessly into the NBN Atlas. I use iRecord myself for all my recording and I encourage others to do it too. Records are verified by experts (like me & Matt for Tachinidae) and then stamped as being approved / accepted by us. In general a record must have been confidently identified to species to be worth adding to iRecord

NatureSpot runs its own instance of iRecord with a possibility to have their own taxa/names but in general it is 99% compatible with the NBN network and data will flow into the NBN but perhaps a bit slower than through iRecord.

Martin Harvey has been working on iRecord lately, in particular the Verifiers page which is in the process of being updated. There are links to his work (newsletters and the like) once you log in to the site.

FSC are supporting iRecord initiatives too, there's details of training courses and a survey on the FSC Biodiversity Forum where you can also ask questions.

Identification sites

Any system which fails to attract the attention of experts is not going to be an efficient method.

The site which best exemplifies the forum system is the French **Le Mondes des Insectes** in which images are posted into a forum, debated and identified then moved to a gallery once verified by an expert. Those records then get sent to GBIF.

Diptera.info attracts the experts but doesn't record. It is one of the best places to get problem identifications sorted out.

iSpot can both identify and record. Best used for non-Diptera images such as beetles as there seem to be expert coleopterists who pay a lot of attention to items turning up there, I can get an ID within an hour. Chris Raper and I differ on the "ease of use" of iSpot, he doesn't think it very user-friendly whereas I think it's OK - but then I do geotag any images I upload there so maybe that's the reason I find it smoother. We both agree that it is "pretty inferior when compared to iNaturalist". I did attempt to set up a special interest project on there a long time ago but it just attracted trolls so I abandoned it.

> **Recording Trolls**: Have you recorded many trolls? I've had them on iRecord, iSpot, iNaturalist, NBN Atlas, scores of USA ones on Scratchpad, some through work on Diptera and even picked them up via photography. These are lifeforms which are indescribable. Maybe we could record them and plot them on a map. If only one could think of an appropriate map symbol to use.

Social media platforms: The method of choice for some schemes (hoverflies) whose well-organised team work on images uploaded there. Many naturalists do not support the underlying principles of such platforms and thus some Recording Schemes have no access to them. Consequently there is a huge risk that a record placed on the Dipterists Forum social media sites may be lost entirely.

Dipterists Forum website. Enquiries on this site arise at the rate of around 4 per month across all Diptera. More frequent enquiries are to be found on Diptera.info or iNaturalist.

Instructions

Documentation in the recording sector varies from inadequate down through horrendously bad to totally absent. This is because most of the applications have been writen by software developers for software developers, rarely is a "designer" or a user involved and consultation with verifiers is just one dim memory.

Do share your tips with us, we are happy to compile more guides.

Conclusion

I was twice asked, by wardens of Nature Reserves last week, for a list of species I'd recorded with my camera. A tough request if you record frequently from dozens of different locations. The best answer I could give was that everything I record will end up on NBN Atlas as soon as I can.

Choose your method carefully, if it's an identification you require then some platforms are more suitable than others because experts focus their attention on recording systems which best suit their methodology.

Darwyn Sumner

If you want to try your hand at identification of Acalypterates on iNaturalist then Sam Bushes sent me a link to a huge number of them which got no further than "Acalypterate". Have a go - https://tinyurl.com/y6ja8vhl - get in quick before the easy ones get picked off.

Recording Scheme News

I've had conversations with a few of the Recording Schemes lately. Barry Warrington's Agromyzidae scheme forges ahead, some of his plans were delayed by a house move. John and Pete are very busy dealing with records from the Cranefly scheme through their social media accounts. Phil and Michael continue to work on the Anthomyiidae and Martin Harvey has been busy updating the recording scheme pages on our Dipterists Forum website. Chris Raper has been updating the UKSI database and the Diptera are now an exact match to Peter Chandler's January 2020 list. So the Taxon Toolkit can be used to check your spreadsheets; no more errors.

Stilt & Stalk Fly Recording Scheme

There are two newsworthy items for this scheme. An **iNaturalist project** was set up in May (https://tinyurl.com/y7pamp6y). This has netted a grand total of around 470 records from across Europe, a 67% increase during this year. Working with NBN's Sophie Ratcliffe I also uploaded an historic country dataset (Czechia + Slovakia) to **GBIF**. Details at http://www.micropezids.myspecies.info/node/358

Sarcophagidae Recording Scheme

On our Dipterists Forum NBN page at https://registry.nbnatlas.org/public/show/dp172 is a new dataset for this scheme. A good start with 1,948 records now on the NBN Atlas.

Sepsidae Recording Scheme

An **iNaturalist project** was set up by Steve in July (https://tinyurl.com/ycx73qma)

Cranefly Recording Scheme

There is not a lot of cranefly news for this issue of the Bulletin, and in any case my computers have been rendered pretty well useless by external interference – a great pity and a sad reflection of the world we try to live in !!

Rhipidia uniseriata in Northants

During the recent lock-down I started to work through several pots of flies stored in alcohol. These were part of a by-catch from saproxylic beetle monitoring in 2018 at Yardley Chase, Northants. Much of the material was in poor condition and I could not identify it reliably. Most of the remaining material consisted of common species but I did find a female *Rhipidia uniseriata*. This had been taken in a flight interception trap set in a decaying oak or ash tree in a former deer park. Unfortunately all the material that had been collected from several traps in the area was stored in one pot so exactly in which tree the cranefly had been caught could not be determined. This is the first record of this species in Northants.

John Showers

Corrigendum

There are two ID errors in my paper on the Craneflies of Vlbois (DD) *Tipula (Pterelachisus) bilobata* is in fact the close relative, *Tipula (Pterelachisus) mayerduerii* Egger, which differs in the shape of the inner clasper is longer. Thanks to Rainer Heiss who first let me know about this. The correction will be published in the Bulletin de la société neuchâteloise des sciences naturelles.

The second error was the wrong identification of *Discobola annulata* from a Malaise trap sample as *D. caesarea*. When I floated out the crumpled wing the error was clear.

John Kramer

Empid & Dolichopodid Recording Scheme

Newsletter #25 included: https://tinyurl.com/y2zbvtj2

Hoverfly Recording Scheme

Newsletter #68 included: https://tinyurl.com/y3qygayn

Tephritid Recording Scheme

Laurence Clemons' 200 summary at

http://www.micropezids.myspecies.info/node/301

NEW Lance- fly: Lonchaeidae Study Group

I am pleased to announce the launch of a lance-fly - Lonchaeidae Study Group. There do not appear to be many Dipterists that routinely tackle this family, so a study group will hopefully help develop skills in identifying and finding these flies.

Lonchaea palposa [Jeremy Richardson]

Iain MacGowan, who knows more than most about lance-flies, has offered to support the group. This will mean that the study group will have access to a leading Lonchaeid taxonomist to help with the inevitable difficult specimens. There is plenty of scope for workers to turn up new species in Britain, or even to science. Since the publication of the 1998 Diptera checklist (Chandler, 1998), twelve species have been added to the British list, including two added since publication of MacGowan & Rotheray's 2010 RES Handbook. There are certain to be other species out there!

The key reference work is the **RES Handbook for the Identification of British Lonchaeidae**, which is still in print. Two additional species to be aware of are *Protearomyia withersi* MacGowan, 2015 and *Lonchaea carpathica* Kovalev, 1974. Contact Nigel Jones if you would like identification notes and drawings. There is also a developing online resource at: http://lonchaeidae.myspecies.info/, containing useful images of key features for some British (as well as worldwide) species. A provisional key to males of European *Lonchaea* species can be downloaded from the website.

Silba fumosa - one of the most frequently encountered species [Malcolm Storey]

For anyone wishing to collect Lonchaeidae for the study group, sweeping sunlit tree foliage as high as possible, watching sunlit foliage in woodlands and at woodland edges are the easiest ways to find Lonchaeidae. These methods procure far more females than males, which is unfortunate, as males provide the surest means of determining all species. Male specimens are therefore invaluable, so please do hang on to any you collect. That said, most females can be determined, particularly when comparative reference material is available. Finding puparia and rearing them is probably the best way to obtain both male and female specimens. Page 20 of the RES handbook provides details on finding larvae and puparia.

In the first instance I am happy to check or identify specimens from scratch for other Dipterists. Any uncertain specimens I will refer to Iain.

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Nigel Jones nipajones@talktalk.net

Postscript

Iain McGowan set up an iNaturalist project for World Lonchaeidae at https://www.inaturalist.org/projects/lance-flies-of-the-world-lonchaeidae this June.

NEW Rhinophoridae Recording Scheme

"I think I am ready to take on Rhinophoridae as a recording scheme. I've been in contact with Olga as she is involved in creating another great test key, and she's happy for me to collate records. Both Olga and Chris Raper have offered assistance if necessary. It's a small group so I think it will be very manageable and it will be great to have records going through iRecord and getting on to NBN eventually."

Paykullia maculata - Picture-winged Woodlouse Fly [Malcolm Storey]

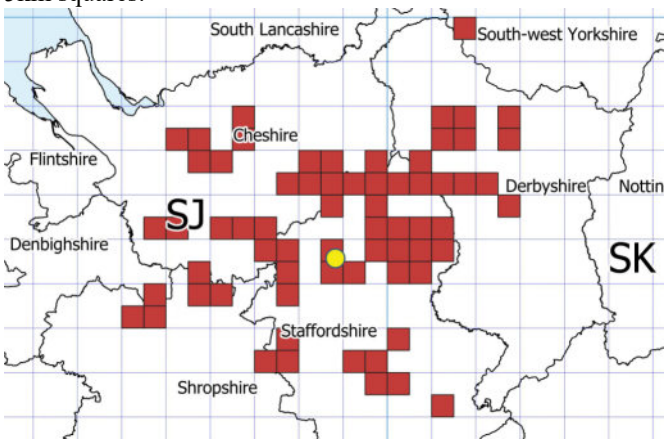
Contact Ryan Mitchell at https://www.dipterists.org.uk/rhinophoridae-scheme/home

Field Weeks

Report on the 2018 Stoke meeting

The records submitted by 15 attendees at the 2018 Dipterists Forum Field Week have now been collected, collated, compiled, corrected and recompiled. They were submitted to NBN in March this year.

The following map shows the spread of the sites we visited, as 5km squares:



Staffordshire University base indicated in yellow. Outliers comprise visits made en route to our base.

Records were fairly evenly distributed across the four vice-counties of Cheshire, Derbyshire, Shropshire and Staffordshire.

The dataset submitted to the NBN comprised only Diptera and Symphyta so if you sent me other groups they still remain to be dealt with. Not us I'm afraid, they should be sent to the appropriate recording schemes who may have entirely different verification methods. There were some important non-Diptera finds, of particular note were the records of *Leucorrhinia dubia* in Cheshire which happens to be a species in which the British Dragonfly Society currently has much interest.

The submitted datasets were checked by myself against the UKSI using the method detailed in Bulletin #88, records which failed to match up to any species in that list were omitted. The records were also checked for Grid reference errors, a full 2% of them got "SK" mixed up with "SJ", exactly like the Dad's Army episode "A question of reference" but without the risk of 25lb shells landing on your head ... this time (see Hill, 2010)

Chris Raper's UKSI utility works very well, I've tried it about 20 times now on a variety of spreadsheets. With a simple set of instructions, this is something that all recorders using spreadsheets should carry out before submitting records for future surveys. It can check that you're using the currently accepted name spelling, useful for any spreadsheet work you are doing.

Only spreadsheet methods were used to collate, fix and compile this dataset. No Recorder 6 or Indicia Biological Recording systems were used, though I'll admit to GIS and digital asset management utilities. Full details are currently in a technical guide that I am preparing on the topic of GBIF recording.

In total 7407 species occurrences were recorded during the week, double that of Nottingham (3711)

Organisers of site visits may now fulfil any undertakings they made to provide species lists by referring to the publicly available data at

https://registry.nbnatlas.org/public/show/dr2196

Hill, A. W., Otegui, J., Ariño, A. H., & Guralnick, R. P. (2010). GBIF Position Paper on Future Directions and Recommendations for Enhancing Fitness-for-Use Across the GBIF Network. Gbif, (August), 25. Retrieved from http://www2.gbif.org/GPP-Final.pdf

Darwyn Sumner

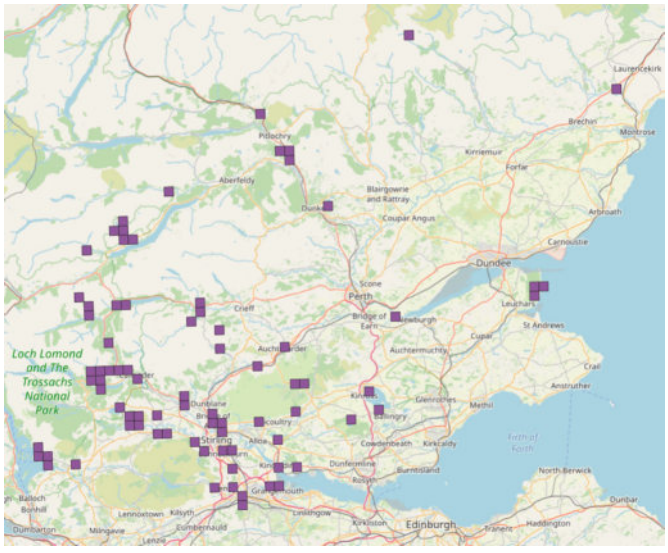
Records from the Stirling Field Meeting

Records submitted by attendees at the 2019 Dipterists Forum field meeting to Stirling have now been compiled. These will have been submitted to iRecord (and from there uploaded to NBN) by the time the Bulletin is distributed. The dataset will be available at https://registry.nbnatlas.org/public/show/dp172

Rob Wolton in Blackwater Marshes [Andrew Cunningham]

The final dataset contains 5,403 records; of these 4,495 are Diptera. The non-Diptera dataset includes 475 records of Symphyta from specimens collected by attendees in the usual Honeypot challenge and identified by Andrew Halstead (who had a very busy week). A total of 980 Diptera species were recorded, representing 73 families. So despite all the problems that the weather caused, we had a very successful meeting.

The figure below shows the records mapped at 2km resolution, indicating how adventurous DF members were during the week. Sites visited included a wide range of habitats - from mountaintops to coastal sand dunes. A special mention must go to the Devon contingent of Rob Wolton, Martin Drake and Andrew Cunningham who made good use of their long trip to Stirling, between them contributing just over 50% of the Diptera records for the meeting.



Jane Hewitt

Fly spotting

Persistance pays off

Larvae of the Chloropid fly *Lipara lucens* are responsible for impressive cigar-like swellings ('cigar-galls') at the tops of the stems of Common Reed (*Phragmites*). These are certainly by no means uncommon in my home county of Bedfordshire, though they are often overlooked. The galls are easiest to find in winter when they become dry and brown. The larvae overwinter in the gall chamber, pupating in the Spring. With a keen interest in both galls and Diptera and not having previously caught the adult insect I was keen to see if I could rear these through, even though the fly is one of the less attractive members of the family.

Lipara lucens gall

Over the last five years I have been collecting the galls in the Autumn in the hope of rearing through the adult fly. In this I had been unsuccessful, though on three occasions, twice from galls collected from beside the River Ivel in Clifton (TL161397, in 2015 and 2016) and once from galls collected at Marston Vale CP (SP000402, 2018) by Stephen Plummer, what has emerged has been the parasitoid of the fly, *Polemochartus liparae* [family: Braconidae]. In 2016 individuals emerged on 6th, 14th and 17 May, In 2017, 2018 from Clifton galls and from the 2018 Marston Vale galls the wasps also emerged in May of the following years. This parasitoid was previously only known from three records over 30 years from Wicken Fen. From galls collected on 15 November 2015 by the River Ivel in Clifton I also had a tiny inquiline fly emerge on 6 May 2016 which proved to be *Cryptonevra flavitarsis* det Jon Cole. This is a relative of *Lipara* and from the same family (Chloropidae). Some galls failed to produce anything including all galls collected beside the River Ivel in Clifton in 2018.

Last year on a Beds Invertebrate Group (BIG) excursion to Sutton Fen on 9 September 2019 cigar galls of *Lipara lucens* were abundant (TL204474 etc) and I collected half a dozen. My patience was finally rewarded when after five years of trying my first specimen of an adult *Lipara lucens* emerged on

12 April 2020! It may not be the most attractive of species but I am nonetheless pleased to at last have images of the adult to add to those of the gall and the other various associated species!

Polemochartus liparae

Cryptonevra flavitarsis

Lipara lucens

Alan Outen

Recording abroad

World records

As a consequence of some work I have been doing with NBN to try to upload foreign records to GBIF I developed a spreadsheet format that is compatible with Darwin Core.

It turns out to be rather useful for recording material from one's own trips abroad. Many Dipterists I know have a lot of material and records from their various trips abroad over the years and will have tried various means to maintain some sort of database, either spreadsheets or struggled to get Recorder 6 to fit the bill.

This one has been given the thumbs up by NBN and GBIF and could prove very useful to you if you feel the need to tidy up your spreadsheet records a little, I certainly found it invaluable for updating my record of specimens and records from my travels.

It's in Excel format, uses VLOOKUP extensively and is based on a simple model. The model comprises 4 linked tables, each on a separate sheet:

A. **Sources**: just one record per expedition
B. **Locations**: determine each site just the once and reuse it many times, a chance to revisit those places via Google Earth.
C. **Checklists**: If you've strayed from the UK then our UK checklists are no use. You have to find it on GBIF and use their code, it's just two fields per taxon though (code + name) and you only have to do those that are amongst your finds
D. **Occurrences**: Link the above together with the date and whatever field notebook numbering system you use. Now rummage through your collections and try to put a name to those you've neglected for years.

Some day you might find a scheme which wants those foreign records. If there's no GBIF scheme then you could always use those records to put together something for the pages of the Digest or the Bulletin. In the meantime you have it in a format written especially for biological recording - Darwin Core.

Download the template from:

http://micropezids.myspecies.info/node/357

Darwyn Sumner

Recording in Europe

Finland

https://luomus.fi/en

This is the site LUOMUS from the Finnish Museum of Natural History. Two items of interest on their home page at the time of writing. An account of wildlife trade and how it affects biodiversity (in English) and a link to the Finnish Biodiversity Information Facility - their equivalent to our NBN Atlas.

Netherlands

A large project to map the distribution of all flora and fauna in the Netherlands is about to start up. According to Waarneming.nl: NWO, Naturalis Biodiversity Center, University of Amsterdam, University of Twente and the Westerdijk Fungal Biodiversity Institute have invested more than €18M in the project ARISE which hopes to do the job in 5 to 10 years.

Koos Biesmeijer stated: "*The loss of biodiversity is one of the most important threats to humanity. We therefore urgently need better tools for species recognition and monitoring of*

biodiversity. Because only when we know what's going on can we keep it."

The article emphasises the power of the project to provide services though less clear is the means by which data from surveys & public information gathering might be included or what the relationships with other biological recording initiatives might be.

Darwyn Sumner

iNaturalist

Quite a number of naturalists whom we know are regular users of iNaturalist. Chris Raper and Ian Andrews, both of whom organise UK Recording Schemes are very busy making identifications on the site with thousands to their credit. Victoria Burton too, who was surprised to learn that her work for City Nature Challenge placed her amongst the top European Diptera identifiers there.

Projects

In May I set up a Project on iNaturalist. It's fairly simple to do, just specify a taxonomic group and a region of interest and you've got a well-presented page which acts as a kind of filter on all the records ever uploaded there. It has its own url too so it can be used by Recording Schemes to promote their work.

There are currently three of these related to UK Recording Schemes, the **Micropezid & Tanypezid** scheme, Iain MacGowan's **Lonchaeidae** which he set up at the end of June and Steve Crellin's **Sepsidae**.

In practise the management of the project is straightfoward. A bit of initial tidying is required up to reject "wrong-uns" such as beetles or Empids which one simply reassigns by suggesting a different taxonomic group. They support collaboration too, anyone can join a project and chip in with their own identifications.

Certainly there are many Diptera which cannot be identified from images, especially fuzzy ones, but those which can, end up on the page's "most observed species" list. My top 3 are *Neria cibaria, Micropeza corrigiolata* and *Rainieria calceata*, Iain's are Genus *Lonchaea*, *Silba fumosa & Lamprolonchaea smaragdi*. As Iain states for his project "*to encourage collecting of specimens as only a few species can be identified from photographs*"

These projects would work fine for any of the UK Recording Schemes or Study Groups. Exceptions might be the enormously popular ones such as the hoverflies (too much management) but it's easy to imagine smaller study groups getting some value from them. The Ismay's Chloropid study group for example if all that were achievable was a little picture gallery of the most common species.

It may appear to conflict with our UK-based iRecord methodology but the fact is that non-specialist recorders (photographers) will choose the easiest system to post their records regardless. There will always be UK records posted on iNaturalist and now that NBN has stopped automatically extracting these it's valuable for the UK Schemes to keep an eye on records posted there.

Other UK Schemes have shown an interest, Ian Andrews (Heleomyzids), John Kramer (Craneflies) and Andrew Grayson (Oestridae), no promises yet but keep an eye open for more projects. Conopids and Sciomyzids would be nice.

The projects require very little maintenance and you'll collect some nice "thank you"s for any identifications and maybe find new recruits keen on your group.

Darwyn Sumner

European publications

Publishing practises old and new

or "No ♂♂ ♀♀ please, we're naturalists"

"*These data are the base for the future researchings on the presence and distribution of this dipteran family in Romania*"

Thus wrote Medeea Weinberg in 1994, similar aspirations are expressed in many papers for many countries across a wide range of taxa.

The early nineties were the crossroads for many of us as the digital revolution began to be exploited in the form of huge online repositories of species data, mechanisms to record and upload it there and institutions to provide support. At least that was the situation for some countries, in many that revolution didn't arrive (https://www.gbif.org/the-gbif-network)

Modern practise when publishing a paper is to provide all the supporting data in digital format (Chavan, 2011). Outside standard methods of publishing to a GBG such as UK's NBN or Finland's Loumos etc., our sector may have few options to publish such digital data. Perhaps it's possible for authors to deposit a spreadsheet online somewhere but many European authors who are issuing updates (Weinberg's "*future researchings*") on those 1990s compilations are continuing to this very day to provide the data only as printed lists within their publications. They have no other option.

These printed lists come in a wide variety of formats. As a researcher who has attempted to extract records from scores of such papers the formats can be best described as idiosyncratic, inconsistent, and frequently incomprehensible.

At some point in time these authors expect their records will be extracted from their papers and uploaded to a GBG in order that they may play a part in conservation.

The current standard for such data is Darwin Core (Wieczorek, 2012), one devised specifically for biological recording and which incorporates other standards such as various ISO and EEA standards, all the result of extensive research across the globe.

However, ancient practises, presumably originating from the time of Linnaeus, are acting as barriers to the extraction and interpretation of data from published papers.

The following details how the practises in modern papers may be improved in order to facilitate better extraction of such records. Lest I offend anyone, the examples below, though observed in many such papers, are all bogus.

1. **Detail the locations**. Avoid putting this list only in a separate paper, which may not be accessible. A tabulated list is ideal but failing that, ensure that the list can be readily converted to a CSV as defined by Excel. Thus each property should be separated by a comma (if a particular property is absent from a location then use two commas which will then be interpreted as a missing entry.) If tabulated lists cannot be used then each record should be separated by a symbol which doesn't appear anywhere else in the text (usually a semicolon but other unique symbols can work.) The idea is that when that text is copied into a text editor the researcher will be able to replace all occurrences of that symbol with a line-return and thus convert it to a table.

   1.a. **Geospatial coordinates**: Always provide DMS coordinates, they can be acquired via Google Earth and the paper's author will know the locations better than an interpreting researcher.

   The required format is:

   41°06'00.20"N, 8°33'33.10"W

   This format gives additional information - the accuracy of the measurement. A coordinate given to the nearest second has an accuracy of 30m, if it's less accurate:

   41°06'N, 8°33'W

   then the accuracy is clearly 60 times lower, to within 1800m.

Darwin Core uses decimal coordinates thus:

59,84809°N 10,79341°E

but if you use that then you will need to add a further "accuracy" property to your list. Note also that 5 decimal places when expressing decimal coordinates is the limit (1 metre = a very good GPS), more than that is never used in biological recording.

Do not use codes, either to country-specific mapping coordinate systems or non-standard means of expressing lat/long. Your readership extends beyond the traditions of one country and GIS experts in your own country can readily convert the above coordinates to your preferred grid system.

1.b.Traps: The collecting method belongs in the above list, for a malaise trap the entry would be [*item1*],malaise trap,[*item3*] but our default method is sweeping so [*item1*],,[*item3*] will suffice.

Occurrence dates do not belong in this list, just the overall operating periods. If malaise traps and other events form part of a narrative then that account may be published elsewhere but if it cannot be located then this will destroy the integrity of the main article.

2. Occurrences: Typically found in the part of the account that appears below each described taxon, usually under the subtitle "Material Examined". The same principles of being able to convert to a CSV table apply to these lists.

2.a.Location: Unambiguously linked to the locations table, either via the location name or a site number if you specified that

2.b.Numbers & sex:

Do not use the ♂♂ and ♀♀ symbols, they are uninterpretable by any known method. The habit of using ♀♀ to indicate plurals is unfathomable (one never sees ♀♀♀♀ to indicate 4 females); it's illogical.

Use 1,m or 2,f or, if it's a mixed catch then 1|2,m|f (using the pipe symbol - a standard Darwin Core technique for putting more than one value in a field)

2.c.Collector and determiner: By all means use codes if you listed the collectors/determiners at the top of the article. If the determiner is not specified then the researcher will assume that the paper's author(s) performed that task thus:

[item1],[collector],,[item4]

If that's not the case then your list will need the form [item1],[collector],[determiner],[item4]

2.d.Dates: Most of the world's population use some sort of DMY format but there is an increasing trend to adopt a machine readable format of YMD (China, Japan, South Korea, Canada, North Korea, Taiwan, Hungary, Mongolia, Lithuania, Bhutan.)

No-one uses the 27.vi.1895 format with its roman numerals except authors of papers, it serves no purpose, merely confounds researchers.

Darwin Core however is written for naturalists and specifies dates in this format:

YYYY-MM-DD

It's text-based so ensure your spreadsheet isn't using the Excel date format.

It does take some getting used to but is very powerful and gets around all sorts of problems with vague time periods and date ranges.

Examples

2005-06-02	
2002-06-28/09-30	(malaise trap)
2005-06-03/16	(malaise trap)
1840/1984	(vague date)

3. Explaining the coding: Published papers must explain any coding used, in particular any georeferencing system. Assuming the data lists in the paper will break down into Excel tables with a little care on the part of the researcher, it is worthwhile providing an explanation of the column headings that have been used - as a piece of text in the following general form:

Location: [site no.],[site name],[lat],[long],[accuracy],[method];
Occurrence:
[quantity],[sex],[site no]/[site name],[date],[collector],[determiner];
These are only suggestions, add [museum] and [accession#] too, if available.

At some point in the future, someone is going to try to extract records from the paper you published. Be kind to them, they are trying to fulfil Weinberg's aspirations, one day that paper may be the only evidence that such a creature ever existed.

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Darwyn Sumner

Photography

Captured live specimens

I've tried various methods to photograph live specimens brought back to the studio. Mostly the open top to the container lets them fly away, which they do at the most inconvenient moment. If you are lucky enough to recapture them in the room then they are inevitably covered in spider webs or missing limbs.

This is my latest set-up:

The cage is Watkins & Doncaster's least expensive Bugdorm 43030. It's fairly quickly assembled using corner pieces and rods threaded through the edges of the bag. A roll of PTFE tape is advisable as the rods may be a sloppy fit.

1. Secure Bugdorm to bench with tape (not PTFE)
2. Add an Oasis block to a 0.22L/7oz Lock'n'lock box (which it fits snugly) and water.
3. Insert plant.
4. Insert fly.
5. Tie the front of your camera's lens into the sleeve hole using string (rubber bands if you insist on a fight)
6. Arrange your flash or LED lighting or use ambient if that works for you.
7. The camera may be better placed on a pile of books rather than the tripod shown, you will need to pick it up and move it around when the time comes to shoot.
8. Do something else whilst the fly condescends to pose, it should head for the high humidity in the Oasis eventually.

Darwyn Sumner

Techniques

Popular photography magazines fall into the publication bias trap by viewing it solely as "Art" to the exclusion of other uses of photography. Useful sources for us require a bit of searching, you'll find some blogs that detail techniques such as Nikola Rahme's Flickr plus the following:

- Julian Cremona, 2014. **Extreme Close-Up Photography and Focus Stacking** (book)
- Johan J Ingles-Le Nobel, 2018. **Extreme Macro** at http://extreme-macro.co.uk/
- Darwyn Sumner, 2020. **Light kit: Small game hunting**. Macro flash and Nikon mirrorless cameras. "*Fantasic work*" (Mike Harris, editor of NPhoto.) A pdf accompanying this Bulletin is on the archive page at https://tinyurl.com/y3pqcajh (but not printed.) Aimed at a general naturalist audience and specific to one camera brand though with many other useful tips.

The following technique uses a camera that many of us possess:

Set specimens & Olympus Tough

I keep coming across diptera images on Flickr shot by Ian Andrews using his Olympus Tough TG-5 and quizzed him about his technique for photographing freshly killed specimens. I've got one or two small non-UK collections to work through and images would be useful to chase up identifications and perhaps get the records posted onto GBIF. Most dipterists I see in the field have one of these Olympus cameras or its predecessor in their pocket.

Ian has a system that allows him to work pretty quickly, even grabbing a quick shot from a specimen in order to answer a social media query. That's the kind of effortlessness I'm after.

Ian's method:

1. Use matt black or matt grey card (find some without a heavy 'grain'...smoother the better), stuck on to a 2"x 2" square of 10mm plastazote, to pin the fly on. I make a hole centrally in the card with a very slightly larger pin and pin the fly into that.
2. Pin the fly laterally as usual, but then move the fly up so the tip of the pin is just inside the fly and so invisible. If photographing an older specimen, then obviously can't do that and have to accept the pin in the photo.
3. Either side of the plastazote is a 20mm deep transparent box (old plastazote strip boxes from W&D), on which sits a microscope ringlight, so that the fly is in the middle of the ringlight. Ringlight is an old one from GX with a diffuse ring bulb.
4. Balance the camera on the ringlight.
5. No flash on the TG5 (I have an Olympus LED light guide for field use, but remove it from the camera when working indoors)
6. Set ISO to 100
7. Select 'spot' metering mode
8. Generally use the dial to set exposure at -0.3, but adjust that depending on colour of fly and background card. Yellow flies like my Heleomyzids are best against a pale grey card, dark flies like Sarcophagids against a black card. Sometimes I need to raise the exposure above 0.0 with pale flies on a grey card, but if you get above +0.3, the dreaded TG purple spot appears! Best to keep it at -0.3 and adjust brightness later on the computer (I only have the image adjustment that comes with Windows Photos, but it is good enough for brightening a photo up a bit)
9. Use focus stacking mode. Generally it ends up with a shutter speed of about 1/15 or so; but the set up is very stable, so can get away with 1/8 even.

Ian Andrews

National Insect Week 22 to 28 June 2020

The National Insect Week photography competition 2020 launched on 22 June 2020. Amateur photographers from the UK and around the world can send in their best photograph of an insect or insects until 31 October 2020.

https://www.nationalinsectweek.co.uk/photography

Ian's Olympus images:

Campiglossa plantaginis **[Ian Andrews]**

Platycephala planifrons **[Ian Andrews]**

Ravinia pernix **[Ian Andrews]**

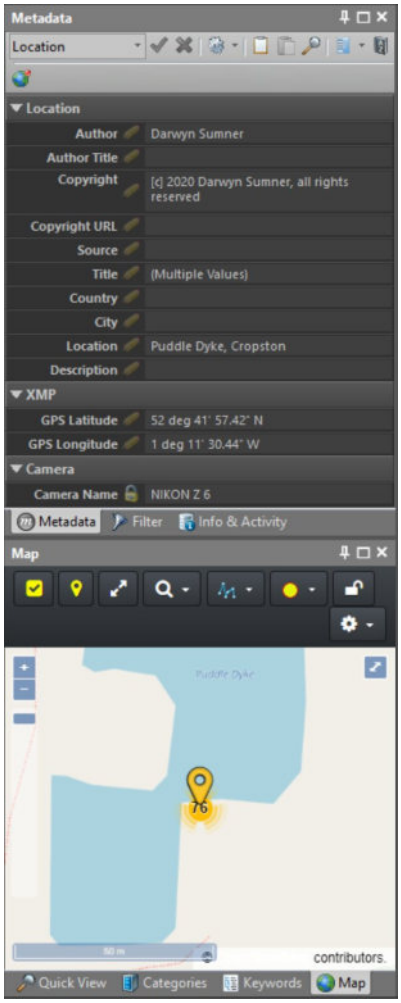
Scary beasts: HitchHikers Guide featured the Joo Janta Super-Chromatic Peril Sensitive Sunglasses which turn completely dark and opaque at the first sign of danger. This prevents you from seeing anything that might alarm you and is thus now incorporated into the electronic viewfinders of modern mirrorless cameras. Nikon cameras have an eye sensor that turns the viewfinder off when you move your head. Utter nonsense for the macro photographer. **Don't panic**, fix it with tape or paper.

Fast geotagging

To take advantage of the easiest and fastest way of recording using a photograph (iNaturalist) you'll need to add the name of the species (or as near as you can) to the Title and geotag it so that it has precise location coordinates.

Taking your GPS into the field with you then downloading the track and using Garmin's Basecamp to geotag your images is fairly quick but if it's a place you know well then you leave your GPS at home, there's no need for it.

The free Geosetter can be used but the fastest method is iMatch:



You should already have a customised metadata panel set up along the lines shown. The Author and Copyright have come from your camera settings.

1. Enter your estimated identification into the Title (multiple images are selected here, they are different, hence the message). Location name isn't essential but now is a good time to add it.
2. Find the location by scrolling and zooming on the Map panel
3. Using the target marker button place a target marker on the spot.
4. In the thumbnail images panel to the left (not shown here), select all the images to which that location applies
5. Press the "Apply ..." yellow tick button and confirm. That's when you see the number (76) on the map and the Lat/Long values in your metadata panel.
6. To confirm and write all that to your image metadata, select Commands | Metadata Write-back | All selected files on the main menu. Or Ctrl+Alt+S

Your images can now be used to record in both iSpot and iNaturalist simply using drag and drop. Flickr the same.

Darwyn Sumner

Surveys

Landscape scale monitoring

In Cranefly News No. 35 (Spring 2020) I published an article entitled 'Craneflies as part of a landscape scale invertebrate recording project including several new to Staffordshire (VC39)' (Boardman, 2020). This briefly detailed a piece of work I carried out within Natural England (NE) to develop a landscape scale monitoring methodology. As background it isn't a secret that Natural England's funding was cut dramatically under austerity (47% since 2010 - https://tinyurl.com/yagv6wu3) The effect this had on SSSI monitoring was fairly dramatic and in response the organisation began a series of reforms of protected sites monitoring. Several of these reforms remove any actual invertebrate species monitoring and rely solely upon habitat metrics. My feelings have always been that species monitoring is key and reliance upon other metrics can miss subtle changes in management that could miss the decline or even disappearance of species, hence the development of this methodology. Also the more we separate ourselves from species, we are in danger of an organisation of losing the connection and the expertise needed to survey and identify.

The pilot survey was carried out in the Cannock Chase to Sutton Park Priority Focus Area (CC to SP), a 13 km long naan bread-shaped piece of land (Fig. 1) that contains scrub heath, old sand pits, acid wetlands, fen, restored wetland features (Fig. 2), veteran parkland, brownfield sites, in a generally urban and suburban setting. Despite a number of SSSI's and other protected sites within the CC to SP area, very few of them were recognised (as NE would recognise them) as important for invertebrates. This went against my own personal experience having previously worked as a freelance entomological consultant close to this area.

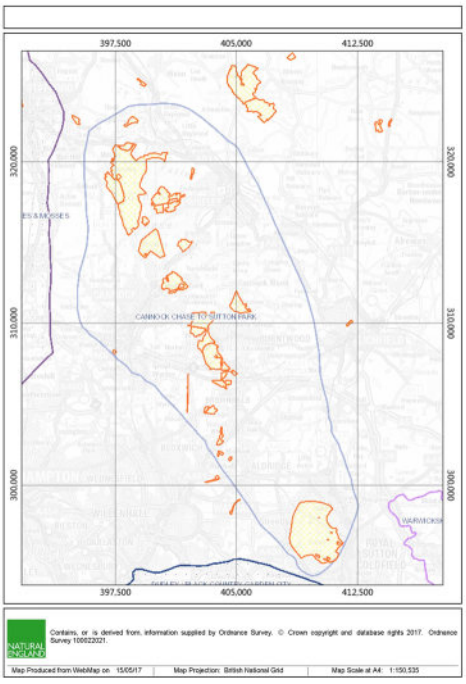


Fig 1. – Cannock Chase to Sutton Park Priority Focus Area

The methodology initially identifies known areas within a landscape (based upon either existing knowledge / data, or by exploratory survey). It then progresses to identify key invertebrate groups that are representative of those habitats and are likely to be compatible with assemblages in Pantheon software (Webb et al., 2018), or adjusted assemblages (see Fig. 3 for a visual explanation). Following this initial stage, gaps and other potentially interesting areas for invertebrates can be examined.

In CC to SP the four groups of invertebrates that were used in the assessment were saproxylic beetles (dead wood habitats), craneflies (wetland habitats), bees and wasps (heathland and sand pits), and day flying Lepidoptera (brownfield sites). Around a dozen or so sites were surveyed each by myself and a contractor (Steven Falk who focused solely on bees and wasps) during 2018/19, and recently completed saproxylic beetle survey data was used. As Boardman 2020 highlights, craneflies worked well at assessing a variety of wetland habitats within this particular area of the West Midlands, and several interesting discoveries were made.

Table 1 shows the sites, data, and results from cranefly surveys in the wetlands within CC to SP. Note – other taxa were surveyed on some of the below sites and favourability or not gauged against those where most appropriate.

Site Name	Species Recorded (craneflies)	Total no. sp. of rarity & specialist interest	Favourable Species Assemblage Types (SATs)
Gentleshaw Common SSSI - Unit 4	8	4	W312 (Sphagnum bog)
Cannock Chase alder carr SSSI - Unit 21	37	7	W114 (stream and river margin)
Sutton Park NNR	55	7	
Shire Oak LNR	15	2	
Leigh Wood LNR	19	2	
Clayhanger SSSI	19	2	W314 (reed fen and pools)
Chasewater SSSI - Unit 6	25	2	
Jockey Fields SSSI	19	1	
Stubber's Bog SSSI	10	0	
Pelsall Common LNR	27	0	

Table 1 – Data from CC to SP cranefly survey 2018/19 (adapted from Boardman, 2019).

The favourability of several sites were able to be determined by cranefly and other assemblages. The output of the CC to SP work was two-fold; it showed that the methodology produced better information than was in existence for this landscape, and offered the potential for it to be applied elsewhere using different taxa in different habitats. Unfortunately follow up work in 2020 soon bit the dust under Covid-19 restrictions, but it is hoped that it can be resumed in 2021.

There is of course the potential for other fly groups to be used in such landscape scale work. Soldierflies, hoverflies, snail-killing flies, long-legged flies – potentially all of these groups individually, or combined, within a refined Pantheon assemblage score could be used, alongside other taxa dependent upon habitat type to assess sites or landscapes. A combination of craneflies and soldierflies works well in assessing tufa and woodland dingle habitats, and probably most readers of this article could from their own knowledge suggest a group of species, or a combination of fly groups that would show good condition of wetland or other habitats in their own geographical areas. Key to this though is the understanding of the ecology of those groups of flies and a

recognition (i.e. whether or not they are accurately scored) in Pantheon.

Fig. 2 – Restored wetland at Chasewater Heaths SSSI

I intend to keep exploring and carrying on with this methodology once able to do so.

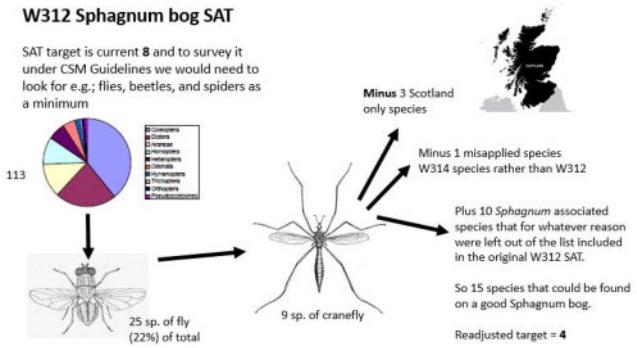


Fig. 3 - visual example of an adjusted Pantheon Species Assemblage Type (SAT)

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Boardman, P. (2019). The development and implementation of a landscape scale invertebrate monitoring project in the Cannock Chase to Sutton Park Focus Area – Parts 1 & 2. Internal report for Natural England. Ref: NEFU2018-025.

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Webb, J., Heaver, D., Lott, D., Dean, H.J., van Breda, J., Curson, J., Harvey, M.C., Gurney, M., Roy, D.B., van Breda, A., Drake, M., Alexander, K.N.A. and Foster, G. (2018). Pantheon - database version 3.7.6

Peter Boardman

for details of Pantheon see https://www.brc.ac.uk/pantheon

(Ed.)

Flies of Aberlady Bay

When I asked the warden of Aberlady Bay Local Nature Reserve in East Lothian for permission to collect Diptera there, he replied enthusiastically. The reserve, which is 15 miles east of Edinburgh, flanks a tidal estuary on the Firth of Forth, and is known principally for its winter geese and waders, the flora of its foreshore, saltmarsh and dune slacks, the carcases of two midget submarines that are exposed at extreme low tides, and the neighbouring Muirfield golf course which lies just to the east.

Aberlady Bay. Map credit: OpenStreetMap

A few days later, the warden wrote again to send me a spreadsheet with all the previous records for the reserve. Under the quirky headings of 'mosquito', 'hoverfly', 'chironomid', 'cranefly' and just plain 'fly', the records stood at 76 species from 13 families; almost two thirds of these were hoverflies. Surely there had to be more than that.

Through a cartographical quirk, the hectad NT48 includes all of the reserve; almost everything else is sea, which made it relatively easy to delineate a search area. NBN had 82 records, and I had a similar haul from the Wildlife Information Centre (TWIC) which collates information from the Lothians, although some of those were duplicates. The end was in sight - or so I thought.

In an idle moment I googled "Diptera Aberlady" and turned up the 2013 paper **The Distribution of Bibionidae (Diptera) in Scotland, United Kingdom** by Skartveit, Whittington and Bland which had details of a couple of extra museum specimens. Next on the list of search results was an article called Diptera Scotica, by Percy Grimshaw, in the The Scottish Naturalist from 1903 by Percy Grimshaw, in which Aberlady was given as a locality for several species. Grimshaw worked at the Royal Scottish Museum (now the National Museum of Scotland). Soon I was delving back through the searchable pdfs of that journal as well as the Annals of Scottish Natural History, The Entomologist's Record and Journal of Variation and the Entomologist's Monthly Magazine, to find a stream of publications by Grimshaw as well as other local collectors of the era such as A. E. J. Carter, W. Eagle Clarke, William Evans and the Rev.

J. Waterston. Indeed, such was the repute of the site that, in previous decades, it had attracted the attention of G.H. Verrall, earning a fulsome tribute in his 1873 article Diptera at Braemar, Aberdeen, and Aberlady, including Six Species not hitherto recorded as British:

I have made myself a tacit promise that whenever I can get a day to spare in Scotland, it shall be spent at Aberlady, perhaps the most successful collecting spot I was ever in, though I have never yet been able to reach what is described as the best place, having had my hands filled before reaching it.

Aberlady seems to have been a particularly fruitful locality for dolichopids and empids, and is mentioned frequently in Verrall's envy-inducing series of articles **A hundred new British species of Diptera**, A second hundred new British species of Diptera, Another hundred new British species of Diptera, and in Col. Yerbury's Notes on certain Diptera observed in Scotland during the years 1898-99.

In making sense of the nomenclature used in many of these hundred year old records, a crucial document was Peter Chandler's checklist of UK Diptera which, with its enumeration of synonyms and explanatory footnotes, allows one to translate outmoded names into current usage. Some measure of quality control can be obtained from the authority which, I noted belatedly, would have been quite a useful thing to include on the Aberlady spreadsheet and no-doubt on my own specimen labels. Despite that, I couldn't work out which species Collin meant for *Syrphus nigricornis* Verr. or *S. lunulatus* Mg. without getting my hands on a copy of British Flies Vol 8., and another nine names remain as puzzles to me, though probably not to some of you.

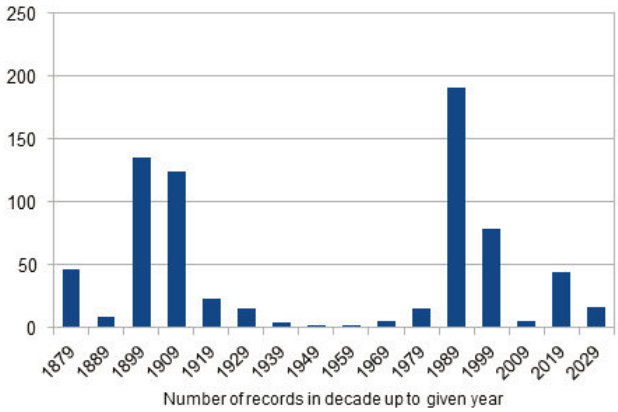
Puzzle species

- *Limnophora compuncta Wied.*
- *Limnophora sororcula Zett.*
- *Chortophila sylvestris Fin.*
- *Balioptera combinata L.*
- *Tachydromia bicolor Fab.*
- *Chrysogaster hirtella*
- *Camptodadius aterrimus Mg.*
- *Diamesa waltlii Mg.*
- *Hydrotaea occulta Fab.*

Fairly smug with my success in having added plenty of records to the list, I had the sense that I was pretty well done. However, Peter Chandler, in answering my query about why I couldn't search the pdfs of the second series of Dipterists Digest (they have been scanned as images), mentioned that he had collected at Aberlady, and passed on some records from Gullane Bents, a very similar dune habitat which adjoins the reserve to the north and east. I realised that I had been ignoring historical records that gave the locality as Gullane, but also Luffness, the name of the estate the runs inland from the southern edge of the reserve. Since the reserve only came into existence in 1952, early collectors might have given these adjoining areas as a better descriptor than Aberlady, the nearest village. So I went through all the old journals again and added quite a few more records.

The final phase was to check these historical and recent records with the organisers of the various Diptera recording schemes. That process took another few weeks and threw up several anomalies, these being nomenclatural gaffes by myself, species suspiciously out of range, or taxa now split into several species making historical assignments uncertain. Tantalisingly, I can see from maps provided with some family test keys that there are additional records for NT48 that I have yet to get my hands on.

Two things strike me about the list. First, there is a remarkable paucity of records from 1910 until the 1980s. Perhaps there are other entomological journals with records from those lean years, but, if so, I have yet to find them; and it wouldn't explain the lack of museum specimens. The Victorian and Edwardian peak was driven by a small number of local enthusiasts; after the First World War did fly-collecting die out? The resurgence in numbers of records after 1980 mirrors the rise in records on NBN, the birth (and death) of the Nature Conservancy Council, and the beginning of systematic surveys. All the same, it seems a little odd that my 17 records from a single trip in March this year exceed all those in the four decades from 1930 to 1969 (14 records).



The other striking thing for me is that Aberlady was once such an acclaimed collecting locality, and not just for flies. In scanning the old entomological journals I came across articles from people who were recording coleoptera, orthoptera, lepidoptera and hymenoptera. Notable among the early dipterists were Verrall, Yerbury and Fonseca who found time to take a day trip there on their way too or from more exciting hunting grounds further north. Over the years records have been added by well-known dipterists of today such as Stuart Ball, Keith Bland, Peter Chandler, Martin Drake, John Ismay, Murdo Macdonald and Graham Rotheray. I am slightly put out to discover that a place I have visited dozens of times over the last several decades, binoculars around my neck, turns out to have been such a honey-pot for dipterists. I don't think the warden knew either.

The total now stands at 382 species from 53 families, with the hoverflies now down to a more modest 35% of the 748 records. That seems a lot, but compares poorly with the 395 species found in one season's collecting in an English grazing marsh (Drake (2016) Dipterists Digest 23: 1-22), the 845 species collected over three seasons in wet woodland and wet grassland in Devon (Wolton, Chandler, Drake & Stubbs (2017), Dipterists Digest 24: 79-94) or the 1037 species recorded in the parkland and woodland of Bushy Park, Middlesex (Chandler (2015) Dipterists Digest 23:69-110). Clearly, there is a lot of work still to do, including a few species still to be identified from my March visit.

Having had my fill of spreadsheets for the time being, I am much more appreciative of the effort that goes into the much larger spreadsheets maintained by the various family recording schemes – and of the pitfalls for the innocent that they provide. In order to produce my histogram of record dates I had to manually convert a large number of DD/MM/YYYY entries that had been automatically formatted as a (hidden) number counting up from 1st January 1900, then find out how to extract the year, and finally convert the results from being text to being numbers so that I could count them. That took a whole (rainy) day at the computer. Mind you, if anyone has

any records for NT48 or Aberlady I would still be very happy to receive them. And when current restrictions have eased, if anyone would like to try their luck in updating some of those historical records, they would be most welcome, with suitable permission in place, to join me in the hunt.

Photo: Katty Baird

My thanks to John Harrison, warden of Aberlady Bay Local Nature Reserve for initiating this process, to TWIC and Peter Chandler for sharing records, and to the many recording scheme organisers for checking their databases and setting me right here and there.

Donald Smith

Welsh SSSI invertebrate assemblages project

Mike Howe has commissioned Cofnod (North Wales Local Environmental Records Centre) to assess the invertebrate assemblages of 85 Welsh SSSIs. Cofnod's Aisling May began this work by contacting the DF Recording Scheme organisers for permission to use the NBN Atlas data for the project and by the end of April they hope to begin to collate the data.

It's good to see our recording efforts put to sound practical conservation and monitoring use, I look forward to reading the results in due course.

Cofnod is at https://www.cofnod.org.uk/Home

Conservation

Dipterists Forum is fortunate in having members with a great deal of expertise in the area of conservation and we are shortly to welcome one more in the shape of Mark Welch who has volunteered for the job of Conservation Officer.

Mark won't be formally taking up that post until after the AGM but by then he'll only have a month before the next Bulletin deadline. If you have any conservation related issues (examples below) then do keep him informed.

Bulldoze, bulldoze, bulldoze

An issue arose recently related to the Planning process, the system which prevents our favourite sites from being destroyed. Rumours of forthcoming deregulatory measures resulting in a weakening of laws protecting habitats and wildlife are on UK government's books. They talk of "*newt counting delays*" in a derogatory tone but that could just as easily apply to any other threatened species.

The Guardian has a disturbing report "**English countryside at risk from Boris Johnson's planning revolution**" which suggests that in order to progress a building programme there is a chance that the strategy could harm habitats and reduce wildlife protection via a weakening of Planning guidelines.

"*National Trust, the Royal Society for the Protection of Birds (RSPB) and the Wildlife Trusts, say wide-scale deregulation leading to lower environmental standards and less protection would be a betrayal of promises by Johnson and Michael Gove to deliver a "green Brexit"*"

Read the Observer's report about this at https://tinyurl.com/ycp62a72 , a summary of their article on 05.07.20

The Independent also has a take on this story at https://tinyurl.com/y2d95s7g

This all seems to be part of the post-Brexit plan to replace key EU plant and habitat directives with some form of wildlife protection, that is not, in the words of our environment secretary George Eustice, so "*spirit-crushing*".

Undoubtedly there will be less on this in the months to come.

Buglife consultation

Buglife circulated their Strategy Consultation document to interested parties recently.

I'll leave it to others for the serious stuff but since they seem to love puns (see their advert) I'll offer:

Redaction action

(it means removal from circulation doesn't it? same as extinction)

For the team dealing with the subject they could be the

Redaction action faction

You're welcome

Darwyn Sumner

Conservation News

compiled by Robert Wolton, Acting Conservation Officer

Coul Links

In February Scottish Ministers refused permission for a golf course to be built over Coul Links. Excellent news! You may remember that Highlands Council was in favour of granting development permission and that the site is rich in scarce and threatened invertebrates including the endemic and very rare Fonseca's seed fly. When Scottish Government decided to call-in the application, a consortium of conservation bodies, including Buglife, formed to fight the nature conservation case. We supported them through a letter objection and a significant donation towards Buglife's costs. Even though they recognised that economic and job creation arguments were strong, Ministers decided to refuse the application on the grounds that it would probably have a significant adverse impact on protected species and habitats, and on the reasons for designation of Coul Links as part of an SSSI, Special Protection Area and Ramsar site. In other words, the natural heritage value outweighs the socio-economic case. As the decision notice says, it would not represent sustainable development. Craig Macadam tells me that the next steps are to explore how conservation bodies can secure the conservation interests of the site, including the future of Fonseca's seed fly.

No Insectinction

Instigated by Buglife, this is a call for action we should all support. To restore the planet's depleted and in many instances devastated insect populations, Buglife says we must do three things: Make room for insects to thrive; Provide safe spaces for insects (free from pollutants and invasives); and Be friendlier to insects. Please do visit the society's webpage to find out more. One recommended action is to be less tidy. I groan inwardly when I hear that a farm has changed hands and the new owners are setting about tidying the place up. What this means is clearing away scrubby corners, getting rid of bramble, cleaning ditches, felling dead and dying trees, strimming verges when in full flower – all terrible for wildlife. Oliver Rackham put it well when he referred to "The vandal hand of tidiness".

Ecological time lags

I wrote an article for the last edition of the Bulletin called 'Insectageddon?'. In this I made the point that some continuing declines in insect abundance may reflect legacy effects, or "extinction debt", to historical land-use intensification rather than recent or on-going activities. It may take many years, even decades, for some populations to reach a new (lower) population equilibrium. The other side of this coin is that it may equally well take a long time for populations to recover following targeted conservation action. This is explored in a thought-provoking paper by Watts et al.(2020). They point out that a lack of improvement in biodiversity indicators should not necessarily be taken as a sign that conservation has failed: rather temporal lags may be masking the move towards success. Biodiversity targets should, they say, account for ecological time lags: targets should include milestones linked to specific ecological mechanisms to allow progress to be properly evaluated. Particularly for habitat specialists, it may take many years for habitats to recover to a state where they are favourable for the species concerned.

Watts, K. et al. 2020. Ecological time lags and the journey towards conservation success. Nature Ecology and Evolution 4, 304–311.

Changes in UK biodiversity are complex!

In a major paper, Outhwaite and colleagues (2020) present and analyse trends in the UK distributions of over 5,000 species of invertebrates, bryophytes and lichens, measured as changes in occupancy. Their results reveal substantial variation in the magnitude, direction and timing of changes over the last 45 years. However, overall, and defying expectations, just one of the four major groups analysed, terrestrial non-insect invertebrates, declined between the baseline year of 1970 and 2015. Terrestrial insects increased in average occupancy, as did bryophytes and lichens, with the strongest sign of recovery being among freshwater species. The data further shows that while average occupancy among most groups appears to have been stable or increasing, there has been substantial change in the relative commonness and rarity of individual species, indicating considerable turnover in community composition. Large numbers of species have experienced substantial declines.

Looking more closely at the data for terrestrial insects, while overall occupancy increased between 1970 and 1992, it declined after that date – the graphs suggest 2005 give or take a year was the tipping point. Diptera data sets used are from the empid and dolichopid, fungus gnat, cranefly, hoverfly and soldierfly recording schemes. The first two groups have increased their occupancy since 1970, while the last three have decreased. Soldierflies have fared particularly badly, the index of occupancy falling from 100 in 1970 to about 65 in 2015 .

Changes in distribution (occupancy) are, the authors say, likely to underestimate changes in abundance and to be correlated with species-richness.

Outhwaite, C.L. et al. 2020. Complex long-term biodiversity change among invertebrates, bryophytes and lichens. Nature Ecology and Evolution 4, 384–392.

Tiny flies flying earlier

Analysis of flies caught in a single 12.2m high suction trap located in farmland at Rothamstead between 1974 and 2014 has revealed that the time of peak flight has advanced by an average of 17 days from 23 July to 6 July. It also found that the numbers of flies decreased by 37% over this period, the average numbers of flies caught per day decreasing from 293 in 1974 to 152 in 2014. The paper states that land use has not changed in the vicinity but no details are given. The trap samples 50 m^3 of air a minute. Most of the flies caught were tiddlers - 80% were from the Phoridae (38%), Bibionidae (22%), Chloropidae (11%) and Sphaeroceridae (10%), not flies I would have thought would be flying in abundance so high of the ground. In contrast, for example, Empididae made up only 1.3% of the catch, Sepsidae 0.18%, Muscidae 0.15% and Scathophagidae 0.01%. Apparently none of the 18,000 flies counted and identified were hoverflies. The authors note that these are the results of just one trap in one locality and further work is required to determine whether they are representative of trends occurring at a wider scale.

Grabener, S. et al. 2020. Changes in phenology and abundance of suction-trapped Diptera from a farmland site in the UK over four decades. Ecological Entomology.

Healthy bat populations

Some encouragement with regard to the state of our Diptera may perhaps be taken from the 2019 annual report of the National Bat Monitoring Programme. This is a volunteer

reliant programme which produces population trends for British bat species. Remarkably, since the baseline year, 1999, no species for which adequate data exists to determine trends, has decreased. Five species have increased significantly , the remaining 5 or 6 species (whiskered and Brandt's are lumped) are stable. Of course, for some bats factors other than prey availability may be the important population limiting factors. Nevertheless, since Diptera are a major component of the diet of most bat species, the finding must surely offer some encouragement, given that prior to 1999 the evidence points to heavy historic losses in many bats.

Bat Conservation Trust, 2020. The National Bat Monitoring Programme Annual Report 2019. Bat Conservation Trust, London.

Pond flies

Floating emergence traps were used by members of the Pond Restoration Group, Natural History Museum and Wildfowl and Wetlands Trust to demonstrate that more insects emerge from the surface of unshaded ponds than from those with a closed canopy above. The most abundant insects to emerge were, not surprisingly, Diptera, although mayflies contributed more in terms of biomass in open-canopy ponds. Likewise, the species-richness and abundance of birds feeding at ponds is greater where the pond surface is not shaded. The authors conclude that management to create open, macrophyte-dominated, ponds benefits birds. However, as Alan Stubbs has pointed out to me, the research has its limitations since no sampling was carried out of marginal vegetation - which as we know is so important for Diptera and other invertebrates. Perhaps the most interesting aspect of the paper is the finding that mass emergences occur on different days on different ponds, so from a bird perspective landscapes which contain a network of ponds, preferably at different successional stages, is highly desirable.

Lewis-Phillips et al. 2020. Ponds as insect chimneys: Restoring overgrown farmland ponds benefits birds through elevated productivity of emerging aquatic insects. Biological Conservation 241.

Pour- ons

Livestock are often treated to control external and internal parasites by pouring chemicals known as endectocides onto their backs. Substantial pollution of the environment must follow, but little research has been carried out on the use of such 'pour -ons', in contrast to where the application is by dosing, injection or boluses. It is therefore of note that Finch et al. (2020), in a meta-analysis of 22 studies considering the impact of endectocide use on dung beetles, found that not only do endectocides make dung more attractive to the adults, itself very alarming since it is known that larval mortality in dung containing chemicals such as ivermectin is high, but also that application by pour-on appears to be particularly damaging. Since in my experience farmers tend to apply pour-ons liberally and frequently, this must be of concern – not just to coleopterists but to dipterists too. Research is urgently needed on the impact on the environment of pyrethrin-based pour-ons to prevent fly strike; given the volumes used by sheep farmers these must surely cause significant harm.

Finch et al. 2020. Implications of Endectocide Residues on the Survival of Aphodiine Dung Beetles: A Meta-Analysis. Environmental Toxicology and Chemistry 39, 863 – 872.

Lack of veteran trees and dead wood are major causes for concern in native woodlands

The Forestry Commission has published a most useful report on the ecological condition of British woodlands as part of the National Forest Inventory programme. It is well worth reading. A key finding is that the principal reason for woods being in unfavourable condition is due to historical management (prior to 1919) leading to fragmentation and low levels of older trees. For example, 99% of woodland stands are in unfavourable condition for the presence of veteran trees. More recently, herbivore damage and lack of deadwood are the two most important factors responsible for poor condition. 40% of stands have excessive herbivore damage, and deadwood levels are unfavourable in 80% of native woodland stands. In contrast, only 9% of native woodlands are in unfavourable condition because of invasive species, and only 3% because of pests and diseases. Just 7% of native woodlands are in favourable ecological status overall. The lack of veteran trees and deadwood is of particular concern from a Diptera perspective - to be in favourable condition there should be more than 40 veteran trees per 20 ha and 80 cubic metres of deadwood per hectare – those woods that have fewer than 1 veteran tree per 20 ha or less than 20 cu m per ha of deadwood are classified as being in unfavourable condition, the remainder as in intermediate condition. We must hope the report is influential in changing Forestry Commission and Government policy, but I fear it may lack impact.

Ditchburn, B. et al. 2020. NFI woodland ecological condition in Great Britain: Classification Results. National Forest Inventory. Forestry Commission.

Dead wood and sap run.
Lion's Mouth, Felbrigg, Norfolk

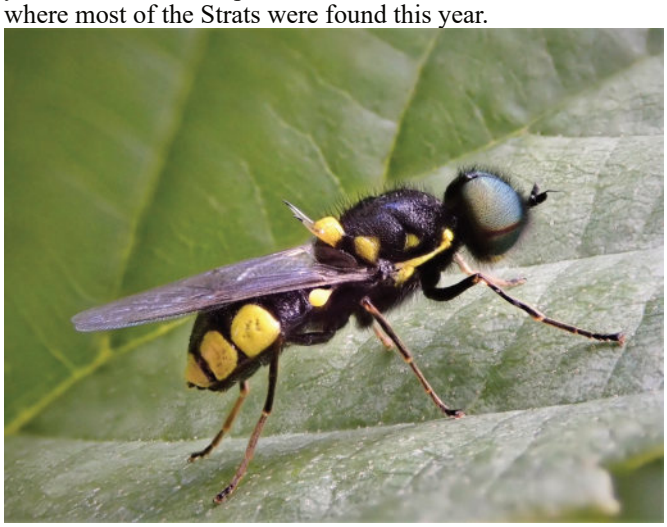
UK BAP **& Adopt a species**

Odontomyia hydroleon (Barred Green Colonel) on the North York Moors, from Ian Andrews.

I am pleased to report that eight adults were found at the normal site on 11th July 2020, with five males and three females seen. These are the best numbers for a few years and the first females to be seen for a couple of years. As usual, adults were mainly found on the leaves of small Alder saplings growing around the fringe of the seepages at midday.

The species seems to have a short emergence, within a period from the final week of June through to the third week of July, but normally peaking around 10th – 15th of July. The vagaries of weather and the fact that multiple visits are not sensible given the delicate nature of the site mean that it is easy to miss the emergence, so it was especially pleasing to find these this year. In addition, two male *Oxycera dives* and many *O. pygmaea* and *O. nigricornis* were also found in the same area.

I am very grateful to Cath Bashforth, Yorkshire Forest District ecologist within Forestry Commission England, who maintains a strong interest in helping to manage the site for the Barred Green Colonel. What with increasingly hot summers drying the slopes up in recent years, the difficulty of getting cattle onto the site, and now a season's management interrupted by Covid 19, it is no easy job! However, clearance of rushes last summer has made a big difference to the southern seepages, which this year are much more open and therefore warmer…and this was where most of the Strats were found this year.



Round-spotted Major Oxycera dives. Photo Ian Andrews.

Male Barred Green Colonel Odontomyia hydroleon. Photo Ian Andrews

Female Barred Green Colonel Odontomyia hydroleon. Photo Ian Andrews

Western Wood-vase Hoverfly *Myolepta potens*

Last year, on behalf of Buglife, Andy Godfrey surveyed Moccas Park, an ancient deer park in Herefordshire, to check this hoverfly survives there and to report on the state of the trees and their rot holes within which the larvae live. Critically Endangered, this hoverfly is now known from only from Moccas Park within the UK. The last survey at Moccas Park was carried out in 2002 when Andy discovered the fly there. In 2019 Andy found just four individuals, all females, compared to 23 males and 32 females in 2002. The poor weather in 2019 may have been a factor – changes in habitat condition are he believes unlikely to be responsible, although the number of suitable trees will be diminishing and climate change may also have an impact. All four 2019 individuals were found close to or within rot holes in horse chestnut trees, using emergence traps, vane traps, water traps and rearing from rot hole material

Emergence trap over rot hole at Moccas Park. Photo Andy Godfrey.

An update from the Rare Invertebrates in the Cairngorms partnership project, by Genevieve Tompkins, Project Officer.

The Rare invertebrates in the Cairngorms (RIC) project aims to improve our current knowledge of the whereabouts of six rare species in the Cairngorms National Park. In doing so, we hope to learn more about these insects, highlight the importance of their habitats and improve their conservation fortunes. The northern silver stiletto fly (*Spiriverpa lunulata*) and pine hoverfly (*Blera fallax*) are two of these six focus species. This update aims to cover the results of the first three years of the project, from 2017 – 2019, plus the current progress of this year's additional surveys.

Northern silver stiletto fly *Spiriverpa lunulata*

The northern silver stiletto fly is an important ambassador for exposed riverine sediments, a vulnerable and important habitat for several rare invertebrates. The Cairngorms National Park enjoys some of the best examples of this habitat in the UK, thereby presenting the unique challenge of a large number of potential survey sites over a vast area. In order to better focus survey efforts, volunteers and project staff spent winter 2018 using GIS aerial imagery and drone photography to identify some of the best habitat on several catchments across the park. Despite poor weather and floods scuppering some survey work in both 2018 and 2019, five new northern silver stiletto fly sites were discovered through the first three years of the project, as well as one rediscovery in Deeside.

Survey work for the Rare Invertebrates in the Cairngorms in 2020 has inevitably been affected by restrictions and delays related to COVID-19. However, volunteers and project staff have been able to get to some sites this year, so far resulting in confirmation of a continued presence at two previously known sites and the discovery of a new site at RSPB Scotland Insh Marshes reserve, in Speyside. We also aim to collect additional information on the sediment and floristic composition of shingle bars surveyed, in order to gain a better understanding of the specific habitats the species is found in. Early results suggest small mats of wild thyme growing on the shingle could be a useful indicator for suitable habitat.

Whilst carrying out surveys for RIC focus species, other scarce invertebrates are spotted and recorded too. For example, northern silver stiletto fly surveys have resulted in the discovery of five spot ladybirds (*Coccinella quinquepunctata*), another specialist of exposed riverine sediments, at several sites across the Cairngorms.

https://cdn.buglife.org.uk/2019/08/Northern-silver-stiletto.pdf

Pine hoverfly *Blera fallax*

Arguably the rarest of the project's six insects, the pine hoverfly was one of our biggest challenges. Following on from training in 2017, volunteers began the important task of monitoring populations at five sites. This gives us crucial data on the fortunes of known populations, as well as insights into the long-term viability of artificially created habitat. These populations have had their ups and downs, with an incredible peak of 60 larvae recorded at one site in 2018. However, the monitoring work has made it clear that Scotland's pine hoverfly populations are very fragile, with our understanding of the hoverfly's requirements in need of further development. An essential element of the project's pine hoverfly work has been the creation of artificial rot holes in Scot's pine stumps, replicating the natural rot holes necessary for the development of the larvae. Landowners have been incredibly supportive of this work, collaborating with the project to create around 100 new artificial rot holes in pine stumps across the park. In spring 2020, plans for the creation of additional pine hoverfly rot holes at two locations were delayed by the COVID-19 lockdown; we hope to have these new areas of habitat in place by the end of the year. Despite restrictions, we were able to get permission to survey for adults at a key pine hoverfly sites this year. Although unsuccessful, it has been several years since one of the highly secretive adults has been seen in the wild in Scotland, two aspen hoverflies (Hammerschmidtia ferruginea) were recorded while carrying out these surveys; a new location for the species.

The Royal Zoological Society of Scotland (RZSS) have been working hard to secure a captive bred population of pine hoverflies, first basing the work at Edinburgh Zoo before moving to the Highland Wildlife Park. Work on the breeding programme has gone well this year, despite additional complications due to COVID-19. The park staff have successfully brought their flies through two breeding cycles, producing over 100 pine hoverfly larvae in 2020. The hope is that RZSS will be able to produce enough viable pine hoverfly larvae to reinforce wild populations, as well as gain a better understanding of the needs of this secretive species.

The Northern silver stiletto fly found at Insh Marshes in 2020. Photo Genevieve Tompkins

Adopt a species/Fly Guardian news from Judy Webb, Summer 2020.

Here in the south east (Oxfordshire) 2020 gave us a very wet winter and spring with high water levels in the fens until the end of March. Subsequent hot and dry conditions seem to have accelerated wetland invertebrate life cycles, with earlier emergence dates for fly species of interest. I was able to continue visits to some key fen sites occasionally during the Coronavirus lockdown period. I was worried for fen water levels in the drought and heat experienced in April and May (no rain for weeks on end) but intermittent showers and cool days since mid-June have kept up water levels such that the drying-out so far is nowhere near as bad as in the summers of 2018 and 2019. Rainfall may refresh and re-fill surface pools so things look better, but the water chemistry is not right as such rain-source water is too low in calcium. Lack of calcium-rich groundwater over time may have significant effects on the habitat as alkalinity could decrease to the point pools become slightly acid.

Milichia ludens (Milichiidae)

After not seeing this fly last year in the site I monitor in Cothill fen NNR, the good news this spring I managed to catch the emergence period of this rare small black fly that breeds in the 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. The first sighting was one female sitting on bark of the ash tree that is host to the ant colony on 31st March 2020, the earliest I have ever seen this species on the wing. In the first two weeks of April more females and males were seen on the tree bark and flying round the tree, so presumably all well for breeding in the ant nest. The host ash tree has Ash Dieback (*Chalara*) but high pollarding seems to have rejuvenated it. The jet ants harvest honey dew from aphids that feed on ivy that climbs up the now reduced ash tree.

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

I have lumped these species together as they all depend on short fen wetland or shallow fen pools for successful breeding as they have aquatic/amphibious larvae. In Oxon they all prefer calcareous, alkaline tufa-forming spring-fens but as many of these are not in ideal condition due to lack of management, most of these rare species are now restricted to Cothill fen SSSI/SAC which includes a section designated NNR (the Ruskin Reserve). Open, warm, shallow marly pools and runnels plus sheets of *Chara* stonewort algae or waterlogged moss mat, seem key habitat features for all of them.

Triogma trisulcata - one male was swept from Cothill fen NNR on 21st April 2020 around the normal time for seeing this species in Oxon. By the time I could visit to sweep Lye Valley fen in Oxford (where there are usually good numbers) the fly could not be found and must have finished early due to the very warm weather. Water-logged moss mat in short fen is necessary for larval development.

In Cothill Fen, whilst these are not my rare fly guardian species, it was interesting to note that the first large *Stratiomys* adult soldierfly of any species found on the wing was a male of the flecked general *S. singularior*, on 12th May, a few days earlier than last year. Following this, a surprise find was a female ornate brigadier soldierfly *Odontomyia ornata* in teneral condition swept on 26th May, the first record of this species for the site. The only previous records of this species in the county that I know of are from Otmoor where it breeds in ditches. Also at that date the first banded general *Stratiomys potamida* was on the wing. Flecked general *S. singularior* is now the large soldierfly encountered most frequently in the fen, where 'frequently' means at least one swept or seen at weekly visits. This is still on the wing at time of writing.

As to the rarer soldierflies, the first individuals of orange-horned green colonel *Odontomyia angulata* were seen on the second of June at Cothill and from then on these were found regularly in numbers at weekly visits and a few are still on the wing at time of writing (20th July). One of the distinguishing features of this species is the orange antennae, yet this year I have swept a number of individuals with much darkened antennae, however they are seem consistently shorter than those in the otherwise very similar *O. hydroleon* which has very dark antennae and is a much rarer fly.

Male *Odontomyia angulata* showing darkening of antennae, 09.06.2020, Cothill fen (Ruskin Reserve). Photo J A Webb.

Female *Odontomyia angulata* showing darkening of antennae, 16.06.2020, Cothill fen (Ruskin Reserve). Photo J A Webb.

Again, despite visiting at the right times (when hawthorn flowers out) in April and May, I found no silver colonel *Odontomyia argentata* adults in Cothill fen. It is worth mentioning that this species is not confined to fens in Oxon. Locally I have found females around shallow pools in spring in an ancient floodplain haymeadow and the larvae must be very tolerant of desiccation as these pools dry out completely in summer.

The very rare clubbed general soldierfly *Stratiomys chamaeleon* was first found in fen sweeping at Cothill NNR section in June, very early for this species: a male on 9th June and a female on 16th June. After that, the only other time this species was encountered was 14th July, a swept male in very new condition. This species should be on the wing into August. The low fly numbers encountered may not accurately indicate the population, as there are no suitable flowers of hogweed or wild parsnip adjacent to the fen breeding areas. Dry Sandford Pit (an ex limestone quarry) has strong springs emerging into the pit floor and here there is a new calcareous fen in formation. Both *S. chamaeleon* and *O. angulata* are breeding there. This is near Cothill fen SSSI/SAC and demonstrates that these rare soldierflies are able to disperse to find new suitable sites from the core ancient breeding area.

Dry Sandford Pit has the benefit of good numbers of wild parsnip flowers adjacent to the fen, so I shall head straight for them when I can visit soon. Counting numbers of adult soldierflies visiting these flowers for nectar is an important method of estimating the health of the population in the other stronghold of S. chamaeleon, the Anglesey calcareous fens.

Female *Stratiomys chamaeleon* held gently in fingers, 16.06.2020 Cothill fen (Ruskin Reserve). Photo J A Webb.

I have been monitoring dip wells weekly in the Cothill fen NNR section since the end of April for Natural England. This will provide data on how the site's water levels have responded to the strange weather conditions this year and provide a baseline before planned further careful leaky-log damming. The aim of this damming is to slow water flow in drainage runnels and retain more spring water to keep the fen wet during future dry summers (avoiding the desperately dry conditions experienced in summer 2018 and 2019). This should much improve the breeding prospects for the rare soldierflies and other wetland invertebrates on site.

A malaise trap survey of flying insects in the Cothill fen NNR section was completed in 2019, grant funded by Natural England. I emptied the trap weekly, sorted insects and sent them to experts for identification. The trap was run again in the early months of 2020 to obtain early species missed by the late start of mid-May in 2019. It is located just inside the woodland edge of the fen, specifically to avoid capturing the very rare soldierflies, which are found only out in open fen. The results of this survey will be compared with a historic insect survey by malaise trap in exactly the same position in 1988. I hope to report on this in a future Bulletin when all results are in and analysed. How has the fly fauna changed over 31 years with challenges of climate change, variable management and nitrate pollution from nearby arable fields?

Beyond Cothill, work continues in Oxfordshire on five other calcareous fens (four SSSI and one LWS) that have been in unfavourable condition due to lack of management, in the grant funded Oxfordshire Fens Project, run by the Freshwater Habitats Trust (see https://freshwaterhabitats.org.uk/projects/oxfordshire-fens-project/). A Water Environment Grant and TOE (Trust for Oxfordshire's Environment) are funding this work which has involved scrub removal combined with reed and rush cutting and raking to restore short fen vegetation (contract and volunteer work). After much practical work last winter and spring this year, the first invertebrate surveys are being done. I hope to report news from this project next year.

Judy Webb, July 2020

Mottled bee-fly *Thyridanthrax fenestratus*, Heath bee-fly *Bombylius minor*, Broken-banded Wasp-hoverfly *Chrysotoxum octomaculatum* and *C. vernale*. News from Chris Spilling.

The season for Mottled bee-fly started off really well this year with observations from several experienced local naturalists in the last two weeks of May in the Slepe Heath and Hartland Moor areas. These were not singletons but included up to six individuals. This is about two weeks earlier than I have ever seen it down here. *Thyridanthrax* is still around as I came across several on sandy tracks on Studland Heath last week (July 21st). Heath bee-fly is having another good year as well. Last week (July 21st) I came across more than 50 nectaring on sea lavender on the Poole Harbour salt marsh edge of Studland Heath. Also, considerable numbers were egg laying and investigating solitary bee nesting holes on the small cliff edges of the heath that run along the beach.

No *Chrysotoxum octomaculatum* sightings this year (as far as I know) but *Chrysotoxum vernale* was reported from Slepe Heath during May.

Bog hoverfly *Eristalis cryptarum*

John Walters tells me the encouraging news that in May he found this very rare fly at three sites on Dartmoor, visiting flowering bogbean. Both he and I attempted to find it at another regular site but failed.

Bog hoverfly on bog-bean, Dartmoor, May 2020. Photo John Walters

Members

Membership Matters

By mid-July 2020 we had 405 paid-up members and 354 subscribing to the Dipterists Digest. 58 people have joined or re-joined after a couple of years' absence this year. One person has resigned and one member passed away. There are still several members who have not yet paid their subscription for this year.

I do urge all members to keep up to date with subscriptions, which fall due on 1st January each year. Late payments after March do cause extra work for us in distributing back numbers. 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 2020/21

Membership and Subscription Rates for 2021 are unchanged:

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.

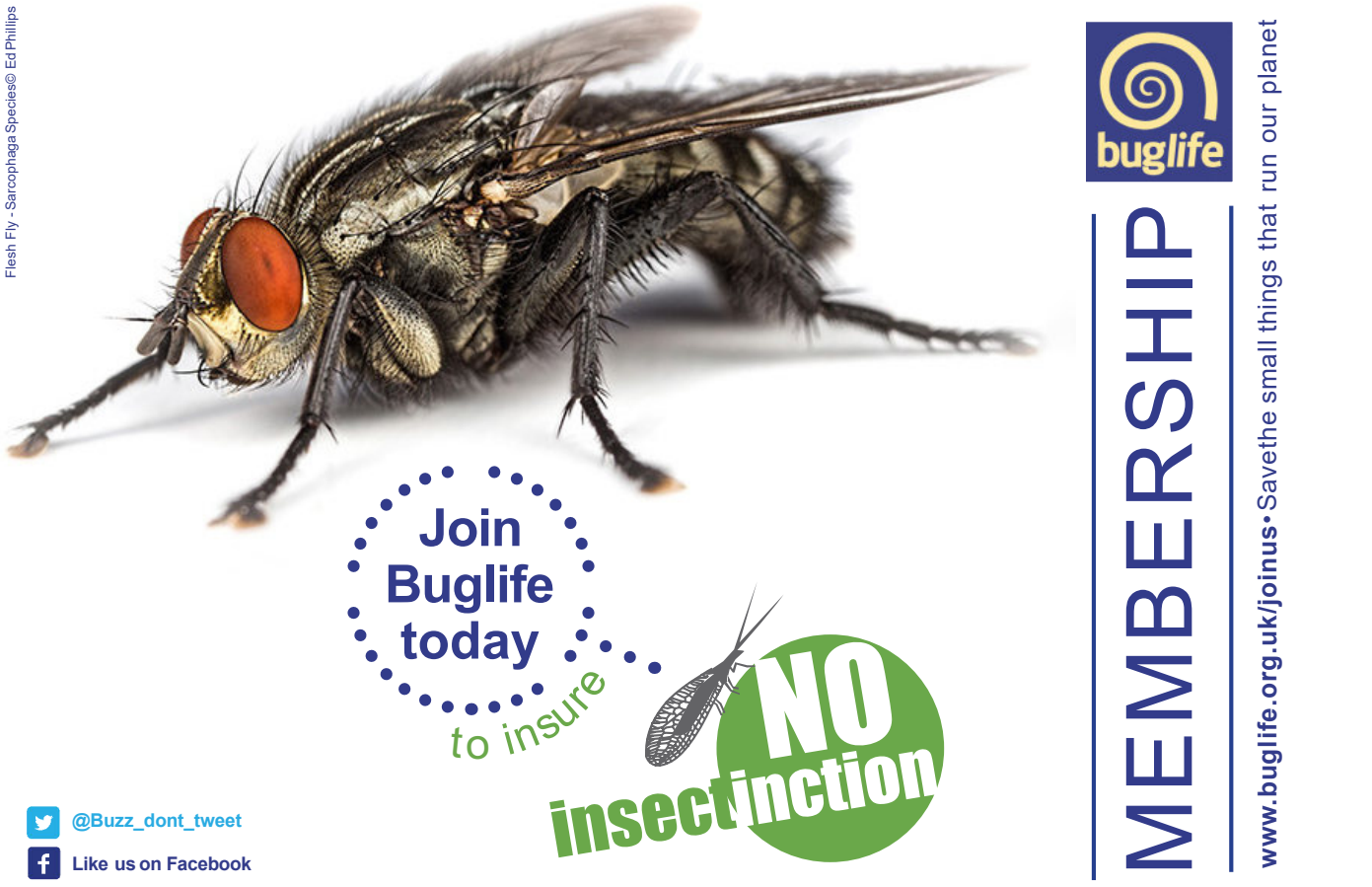
PayPal payments can be made to:

dipteristsforum@outlook.com

or through our website:www.dipterists.org.uk

Please e-mail me to let me know when you pay by PayPal unless you do it via our website, which automatically emails me.

John Showers



Bursaries

The Dipterists Forum holds an annual weekend course at the Preston Montford field studies centre near Shrewsbury. These courses cover selected families of flies in detail, and the 2021 course will be about the Muscidae, a large and important family of flies which utilise a large range of habitats. It will take place from Friday 19 to Sunday 21 February.

The Forum also has annual residential summer field meetings lasting for one week. These take place at various venues around the country, and the 2021 meeting is expected to be based in Falmouth from 26 June to 3 July. Attendees spend their days in the field collecting and observing flies, and evenings in a laboratory where they can identify their catches alongside other dipterists. Beginners are made very welcome and can gain valuable knowledge from more experienced members.

We offer a small number of bursaries for each of these events, awarded on a competitive basis. Each bursary covers half the total cost including accommodation costs. If you would like to apply for a bursary please send your application by e-mail to me, Howard Bentley, jhowardbentley@gmail.com. If you applied for the postponed 2020 field meeting and would like your application to be considered for 2021, please inform me of this.

Your application should say what you hope to gain from attending, how you would expect to contribute to the Forum's aims of the study, recording and conservation of Diptera, and why you would benefit from financial assistance. If you are currently involved in a research programme please include brief details. We will be looking for evidence of enthusiasm and interest in flies. Preference may be given to those who have not received a bursary previously. Applications should not exceed 300 words. Successful applicants will be expected to write a short account of their experience for publication in the Forum's Bulletin.

Applicants must be members of the Dipterists Forum at the time of their application. The closing dates for applications are: Friday 4 December 2020 for Preston Montford; Friday 26 March 2021 for the field meeting.

If you would like further details of what is involved in these meetings please send a request to the e-mail address above.

Treasurer's Report

Dipterists Forum accounts for the year ending 31 Dec 2019

There is a change in the format of this year's accounts. This is because of the large advance payments which have been made to secure accommodation for the 2020 field meeting at the Penrhyn campus in Falmouth, a very popular holiday area of course. They would lead to large apparent deficit for the year. They are already partly offset by participant's deposits and will come back into the Forum account when they make the final payments. These payments by and on behalf of field meeting participants are now shown in a separate section in both the income and expenditure accounts. The Forum also contributes to the Field Meetings by the award of bursaries of half the accommodation cost and by funding extra expenses such as maps and printing ahead of the meeting as well as the cost of a workroom. These payments are included in the main section of each account, which also show the net income and expenditure figures. This change of format has been applied to the 2018 figures for comparison.

The net income has increased slightly thanks to an increase in subscriptions offsetting decreases in other varied sources of income.

Expenditure has increased for a number of reasons. First, the publication schedule of the Digest has caught up with the calendar years by the production of three editions during 2019. Our previous printers went into administration and, although a number of options were considered, the cost of producing Vol 26 No 2 was about 30% higher. There was also a need to replenish the stock of envelopes both for the Digest and for the Bulletin. We invested in a new desk-top publishing programme for the latter.

The Committee has agreed that the Forum can spend up to £10k in other investments for the future. This is reflected in an increased amount for bursaries and grants to support individuals attending field meetings (2 in 2019) and a Diptera Recording Scheme meeting in September, and also to provide books and equipment in connection with establishing a Sarcophagidae Recording Scheme. Three applicants have been awarded 50% bursaries to attend the February 2020 Workshop at Preston Montford. The Forum paid the fees of £600 direct to FSC and is reclaiming 50% from the applicants, one whom has already responded – hence the income and expenditure items referring to FSC Workshop advances. On the publicity side, a new initiative of a stand at the Norfolk Bird Fair was considered very successful.

Donations also appear both on the income and expenditure sides. The first was accounted for mainly by an anonymous donor to support the Sarcophagid initiative, and there was a £20 donation following a public talk. The outgoing donations were £50 to St Georges Hospital in memory of our late Secretary Amanda Morgan and a £250 to Buglife to support representation at public enquiry on the proposed Coul Links golf course which threatens the only known site world-wide of *Botanophila fonsecai*. We are also grateful to the authors of the WildGuide hoverfly book for passing on their royalties.

The final Table shows the Movement of Funds, a retitling of what is not really a balance sheet. The net deficit of £2,702 still leaves ample funds to accommodate both the swings in the field meeting account and further investment for the future.

Signed: Phil Brighton Treasurer

Date: 18/03/2020

Signed: J P Flynn Auditor

Date: 17/05/2020

	2018		2019	
Income	**£**	**£**	**£**	**£**
Subscriptions		6,699		7,309
Back issues	142		68	
Donations	70		270	
Refund of spurious DD payments	160			
FSC Workshop – repayment of advance			100	
Training courses	694		210	
Pooters			18	
Wildguide Royalties	487		277	
Publishers Licensing Society			58	
		1553		1,001
Net Income		**8,252**		**8,311**
Field Meetings - received from participants				
Snowdonia 2017	405			
Stoke 2018	5,394			
Stirling 2019	65		7,826	
Cornwall 2020			1,000	
		5,864		8,826
Total Income		**14,116**		**17,136**
Movement of Funds		**2018**		**2019**
		£		**£**
Opening balance at 1st Jan		27,645		28,413
Net Surplus/Deficit		738		-2,702
Field meeting funds		30		-4,167
Closing balance at 31st Dec		28,413		21,544

	2018		2019	
Expenditure	**£**	**£**	**£**	**£**
Dipterists Digest 24.2	882			
Dipterists Digest 25.1	906			
Dipterists Digest 25.2			922	
Dipterists Digest 26.1			913	
Dipterists Digest 26.2			1,234	
Digest envelopes			748	
Digest postage	1000		1,062	
		2,788		4,879
Bulletin 85	1,355			
Bulletin 86	1,022			
Bulletin 87			1,195	
Bulletin 88			1,331	
Bulletin envelopes			208	
		2,377		2,734
Publishing software			419	
Back issue postage	178		216	
Website hosting			23	
Training courses & workshops	529		189	
Bursaries & grants	450		1,103	
FSC workshop advances			300	
Book illustrations	280		-	
Memberships (NBN, Buglife)	40		10	
Donations	-		300	
Norfolk Bird Fair	-		319	
AES Exhibition	41		41	
Dipterists Day	78		-	
Committee expenses	192		79	
Insurance	138		138	
Subscription refunds	20		20	
Field Meeting expenses	403		241	
		2,349		3,400
Net expenditure		**7,514**		**11,013**
Field Meetings - payments on behalf of participants				
Stoke 2018	5,459			
Stirling 2019	375		7,515	
Cornwall 2020	-		5,478	
		5,834		12,993
Total Expenditure		**13,348**		**24,005**
Net surplus/deficit		**738**		**-2,702**

Dipterists Forum objectives:

a. To foster the study of Diptera, including linking with other disciplines where there is a relationship with other animals and plants.

b. To promote the recording of all aspects of the natural history of Diptera, including the advancement of distribution mapping.

c. To promote the conservation of Diptera.

d. To encourage and support amateurs in harmony with professionals in museums, institutes and universities.

e. To organise indoor meetings, workshops, field meetings and other relevant events.

f. To disseminate information through newsletters and publications.

g. To focus on the Diptera of the British Isles whilst maintaining an interest in those of continental Europe and elsewhere.

Eulogies

Phil Withers 1954 to 2020

Phil at the Etang de Vernange, leading the 2006 Dipterists Forum expedition in France [photo D. Sumner]

Dave Clements: I first met Phil at a now somewhat infamous Field Studies Council Diptera course run by Henry Disney at Malham Tarn in 1984, which was attended by a small galaxy of then and future dipterological luminaries. Phil stood out with his ready (and often rather daring) sense of humour and willingness to say the unsayable. We got on famously, and together later led a risky, uproarious and somewhat frowned-upon late evening expedition 'over the wire' and down the long and unlit path to the pub after the end of one of the evening tutorials. Phil was at that time describing a new Diptera species and upon being asked by one of the attendees, who had better remain nameless, to name a species after them said that he would indeed do so once he discovered one characterised 'by its exceptionally small genitalia'. For some unknown reason a troop of Morris Men were to be found performing on the Malham House lawn one morning, after which they came to ask us how we had enjoyed the dance: Phil opined that he would have much preferred it if they had performed it actually in the tarn… We stayed in touch throughout the years thereafter, having a shared interest in Conopidae, and even after his relocation to France, from whence he would periodically send me ravishing specimens of *Physocephala* and other intractable goodies, usually with a letter describing his collecting adventures and detailing his feuds with various museum curators which he pursued with evident enjoyment. He several times asked me to visit him there but I was always too busy with work. Just a week before his untimely death we had a long and characteristically barmy Messenger conversation which left me still smiling when I went to bed, and thinking that now I had finally retired, that long-deferred visit to see Phil in France might at last become a reality. Alas, too late. Phil was a notable dipterist, a fellow of great good humour and wit, and a good friend. I will miss him.

Phil Withers, Joyce & Darwyn Sumner, Mick Parker and John Kramer on the 2006 expedition

Mick Parker: Dreadful news, In years long past Phil played host to an overseas Dipterists Forum Meeting, and a very good host he was, by far the best overseas trip I ever had, a truly great week, great memories. Such a shame he is no longer with us.

John Kramer: I first met Phil through my identification of Malaise trap samples collected by him on his local reserve in France, and then on two subsequent visits to St. Euphemie where he lived, about 25km north of Lyon. Memories of the first visit, in June 2006, with Dipterists Forum members, Darwyn Sumner (and Joyce) and Mick Parker, are of Phil's strong acerbic personality and his constant stream of non-PC jokes . On that first visit (See DF Bulletin 62/63 2006/7) we spent 3 days at the local reserve and also visited 3 more distant reserves, which involved Phil in some long-distance driving. I always felt an element of tension in being with Phil and this was especially true when being driven by him. His pet hate was of caravans, of which there seemed to be a good number on the French roads, and all of them blocking our way !! The fact that on our final day Phil drove us 100 kms to a National Nature Reserve – an excellent site - is a indication of Phil's energy and his generosity. My second visit was in May 2007, when, in addition to the Fondation Vérot Reserve, we also visited Le Sappey-en-Chartreuse, where we stayed in a Gite near Grenoble, on the edge of the Chartreuse Alps. There I saw the beautiful lady's slipper orchid, for the first and only time in my life – a remarkable sight. The visit was also memorable for the boiled nettles, served with every evening meal, and that, together with the rain, led us to leave early !! Phil continued to send me Malaise trap samples from a number of sites in France. Some of the tubes were hastily labelled each with bit of toilet tissue floating in the alcohol, and these labels had, of course, disintegrated !!

My last memories of Phil are at the Lac Remoray Nature Reserve, in Franche-Compté, where he did a lot of work with his friend Jocelyn Claude, and where he died. This is a large and varied site with an interpretive centre, labs and a conference centre. We met at the Reserve in May 2017 and again at a 2-day conference there in November of 2018 where Phil gave a talk. His was a unique and unforgettable personality and his Bibliography is a testament to his drive, energy and his interest in a wide range of Diptera.

An obituary and bibliography are planned to appear in Dipterists Digest.

Rita Merrifield 1945 to 2020

Rita Howell was born on 7th February 1945 in Becontree, Essex. Her family then moved to Loughton, Essex, where Rita spent most of her early life. Rita enjoyed going into Epping Forest, which was close to her home, and she developed an interest in plants and wildlife in general. She joined the former Epping Forest Branch of the British Naturalists Association (BNA) and at one stage became a committee member. She helped with voluntary work such as picking up litter in the area and was included in a photograph published in a local paper while doing so, and continued similar voluntary work throughout her life.

When Rita left school at the age of 16 in July 1961 she joined London Transport in the Payroll Section. She took "early retirement" in 2001 after 39 years and 9 months of service, having reached the grade of Support Manager.

Rita first met Ken Merrifield in the 1970s on field meetings in Epping Forest when he worked at Walthamstow Polytechnic and they were both members of the BNA. After he moved away to a new job in Buckinghamshire they saw each other only occasionally until 1989 when they got together again and were married in 1990. They found a house in Eastcote, in North West London, that was conveniently located for travel to both their jobs. The house had a large garden that suited Rita's long term interest in gardening.

After many years of happy marriage Rita began to notice that her memory was getting worse and after extensive tests over a number of years her deteriorating condition was diagnosed as being due to Alzheimer's. After a year in hospital she was transferred to a nearby Nursing Home until her eventual peaceful death just after her 75th birthday

After her marriage Rita maintained her interest in wildlife. She was an excellent field botanist and could identify most flowering plants and birds. She enjoyed holidays with Ken, many of which had a natural history theme, often being organised field meetings in locations otherwise difficult to access. They took a number of B&B based holidays together when there were no organised field meeting that were convenient for them, usually these holidays included visits to nature reserves in the area.

Between them Ken and Rita were members of the AES, Essex, BBOWT (Berkshire, Buckinghamshire and Oxfordshire), and Cornwall Wildlife Trusts, Dipterists Forum, BENHS, Butterfly Conservation, National Trust (Rita was a Life Member), Woodland Trust, the British Plant Gall Society plus various local natural history societies.

Rita developed her interest in entomology and became better than Ken at identifying and recording insect specimens. Diptera became their main wildlife interest, developed through their membership of Dipterists Forum (DF). They took most of their field meetings with that society and attended many workshops and other indoor meetings. The first DF field meeting that Rita joined with Ken was at Winchester in July 1990 and between then and 2013 they attended more than 20 DF meetings

Rita was delighted when she heard that a small cranefly (*Ula mixta*, see p151 of The Secret Life of Flies) that they caught during a Field meeting in Scotland turned out to be a species previously unknown in Britain. When collecting insects their catches were usually combined and Ken was often given credit for records that Rita may have made. Rita had very acute vision and often noticed insects, or galls, on leaves that other members of a field meeting had walked past.

During the 2005 summer field meeting, on a day with heavy, rain Ken and Rita visited the Durham University Botanic Garden. While in the hothouse they noticed some drosophiids on a Ginger plant and thought that they would be either a ubiquitous hothouse pest or possibly a species new to Britain. A series of specimens were taken the following day by other members of the party and it was subsequently identified as *Scaptomyza adusta*, an American species that has become established in southern Europe, but not previously recorded from the British Isles (Chandler et. al., 2008).

After retiring from their jobs Rita and Ken became volunteers in the Entomology Department of the Natural History Museum in South Kensington. They enjoyed working there with the experts and the extensive collections, Rita's meticulous nature and excellent vision enabled her to correct many of Ken's mistakes.

Rita and Ken also joined Council Work Parties in their local area assisting with conservation tasks such as litter clearance and they enjoyed spending time doing insect surveys on local reserves. Many summer days were spent removing invasive Himalayan Balsam on the Ruislip Local Nature Reserve and nearby waterways.

Although relatively shy and with poor hearing Rita enjoyed being with friends at natural history meetings. Her integrity and meticulous attention to detail enabled her to make a valuable contribution, not only to London Transport, but also to biological recording.

References

P.J. CHANDLER, J.W. ISMAY, B. ISMAY and G.E. ROTHERAY 2008. Scaptomyza adusta (Loew, 1862) (Diptera, Drosophilidae) at the Durham University Botanic Garden. Dipterists Digest (Second Series) 15(1): 5–12.

McAlister, E., 2017. The Secret Life of Flies. London, Natural History Museum, ISBN: 9780565093365, p151

Malcolm Smart

Trevor James 2020

Many of us with strong NBN and NFBR links worked extensively with Trevor on Recording Scheme initiatives. As National Societies and Schemes Project Officer for the NBN his support and guidance was of great value. That was an era when communications between all the Recording Schemes seemed to be much greater and we all drew ideas off one another. Trevor wrote the book:

James, T. (2007). Running a Biological Recording Scheme or Survey: A handbook to help scheme or society administrators. (September), 61.

Obituary in NBN News https://nbn.org.uk/news/trevor-james/

Craig Slawson 1959 to 2020

I was stunned to hear of the death by heart attack of old friend Craig in February. Though not a dipterist he and I had been deeply involved in Recording for decades and many dipterists acknowledge the huge amount of help he gave them. First meeting through NFBR I can recall discussions on recording and photography topics, he spiders, me flies. In particular at one NFBR conference which gave us an excuse to stroll along a windswept Llandudno promenade. Our continued involvement in NFBR led us to become members of their ALERC Steering Group and Craig was swiftly invited onto ALERC committee following its constituting as a Community Interest Company at the NBN offices in Newark in 2009.

Craig at the 2013 ALERC Conference

We met up frequently after that, Craig used to organise our meeting rooms in Birmingham and was a key player in progressing all the ALERC initiatives.

Craig was manager at Staffordshire Ecological Records Centre and always set up a stall at the Stafford Insect Show where he was always ready to answer questions about recording in Staffordshire - or recording in general.

A great naturalist.

Darwyn Sumner

Website Update (July 2020)

There have been quite a lot of updates to our website in recent months – please do have a look round, and feel free to participate in the discussion forums!

- New materials, links and downloads added to several of the recording scheme pages, e.g. for Craneflies and Sarcophagids.
- An extensive set of downloads for the newsletters issued by the recording schemes over many years. Most of these have been collated and uploaded by Darwyn Sumner. On the DF website they can be accessed from Resources menu, via “Recording scheme newsletters”, or by going to the individual scheme pages.
- The Dipterists Digest page now has links to a full contents list, which can be downloaded and searched, for all volumes to date
- Further PDF downloads have been added for some of the older issues of the Digest; DF committee is working on getting the remaining issues scanned
- Peter Chandler’s updates to the Diptera checklist continue to be added to the Checklist page
- A page on Funding sources has been added, providing links to some of the organisations and funds that make grants towards entomological activities
- The members’ area of the website has some additional resources, including the key to Diptera families by Stuart Ball, with subsequent additions by John and Barbara Ismay (and now with a new index compiled by Dave Bentley); keys to Anthomyiidae by Michael Ackland, Howard Bentley and Phil Brighton, from the 2018 DF workshop; keys to Sciomyzidae by Stuart Ball from the 2017 DF workshop.
- Thanks to DF members who have contributed their ‘favourite fly photos’ for the home page of the website, some brilliant images for attracting people to Diptera!
- Members are also adding identification requests and discussion topics to the website’s Forum section – please join in with more questions and answers!

Many thanks to everyone who has contributed information and resources to our website.

Martin Harvey

Logging on to the DF website

To log onto our website 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

Technology

Affinity

The UK firm Serif have had a massive response to the reduction of the prices of their products by 50% to a mere £25. Our interest is mainly in their Photo and Publisher products, the former beating Photoshop in recent reviews and the latter, their Desk Top Publisher, being of great interest to anyone who writes newsletters, guides, journals and the like. Mike Pugh is another fan of Affinity Publisher, he has 20 years' experience of Serif products. We've enthused together at length and Donald Smith has taken it on too.

Serif keep extending their reduction, last I heard was until 20th June. My offer to assist Recording Scheme newsletter writers is still open.

Microsoft

Should we be concerned about Microsoft's messages that they are withdrawing support for the Office 2010 suite? Messages are popping up in your Excel files at the moment (get rid of them by typing "disable the get office ads" into your search engine.) I suspect most of us will be OK with Office 2010 for a long time to come but anyone investing in more up to date versions (or buying a new laptop) needs to consider compatibility issues when sharing files. The versions currently available are 2016, 2019 and the subscription model 365. It might be an idea to grab one of the more recent versions now before they shift (as Adobe did) to subscription-only versions and the former become unavailable. Excel would be our main interest here, version 2016 adds one or two features that aren't backwards compatible so beware of trying out its relational database feature unless it's just for you. Later versions just have a few cosmetic changes so you probably won't get much value for the extra cost. The basic 2016 version will set you back £75 if you choose to ditch Outlook and get the free Firefox/Thunderbird instead. Be careful of scams, even from reputable online sources, never mind your Tachinids and your Conopids, man is the most sophisticated parasitoid.

Grid reference tools

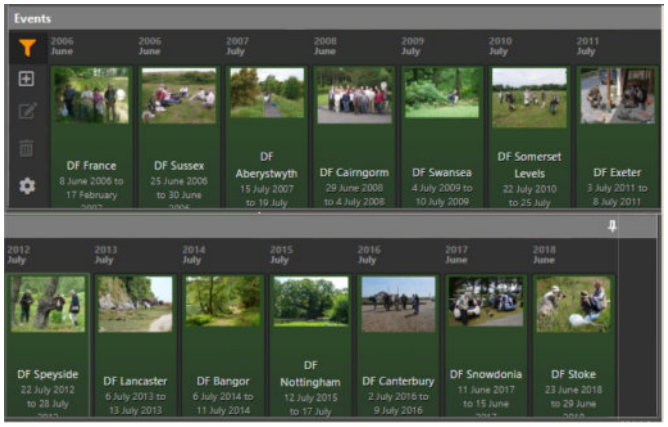
Ordnance Survey have some useful online tools, oddly I've never come across a home page where they are all listed. Their basic "UK Grid Reference Finder" is no doubt familiar to most but they've another that will convert batches from and to any format you desire, their "Batch Convert Tool".

The Dutch tool at https://www.benhup.com/tools/convert-coordinates/ can be valuable too. It has some odd standards for input but it can cope with a variety of coordinate conversions, amongst which is the What3Words system..

iMatch

The latest version has two innovative features. I'd be interested in the Facial Recognition once this gets around to identifying Diptera (New Scientist reckons dogs and cats are now possible) but the really useful feature is Events.

Select a bunch of images from, say, the timeline and apply the Events tag and they can all be assigned to a particular event. This has proved handy for my collection of Dipterists Forum field week images:



Click on one of the Events panels and all the thumbnails from that event are displayed. It came in very handy for sorting out my records on the Stoke field week.

Security

The extent to which your computer is subjected to monitoring and attacks is seen by many as unacceptable. The set of permissions to third party vendors that even respected organisations like ResearchGate for example want to set as default in cookies reads like an Orwellian dystopia. For "We value your privacy" read "Big brother is watching you". Some developers are opposed to this monitoring however and actually seek to help customers. Firefox and Duck Duck Go are prime examples, and the company Acronis whose product I use for my **backups**. They sent me a guide "*Steps to stop prying eyes and keep data private*" and included the phrase "***misuse of personal data by*** [anti]***social media platforms***" in their opening sentence. Their tips are to:

1. Check privacy settings - review and turn off features not needed
2. Smartphone settings - if you own one
3. Beware of infostealer malware - e.g. scam emails (on no account even open emails from people you know if there is no title - assume they have been hacked)
4. Encryption - keeping your passwords safe (use a system like KeePass)
5. Secure Zoom meetings - lots of new security threats there.

Diptera Recording Schemes are suffering real harm from all sorts of intrusive surveillance and malware. Do try to protect yourselves.

Flood, fire and theft

I've had the first of these and survived it The only means to survive these is to store essentials off site. My tip is to buy one or two 4Tb hard disks, label one "Family photographs" and regularly make simple file copies to it. One folder for images and another "Museum" into which you copy all your research work. Add simple text file descriptions to each folder, and perhaps other useful stuff like iMatch backups, OneNote files detailing all your installed programmes and secure backups of your password manager files. Store them in the shed when you leave the house, or better still use two disks and rotate them on a regular basis.

Personal digital archives

An excellent document on this topic covering all sorts of security topics is **Personal Digital Archiving** by Gabriela Redwine which you can access at https://tinyurl.com/ycg86mgw

Darwyn Sumner

Review

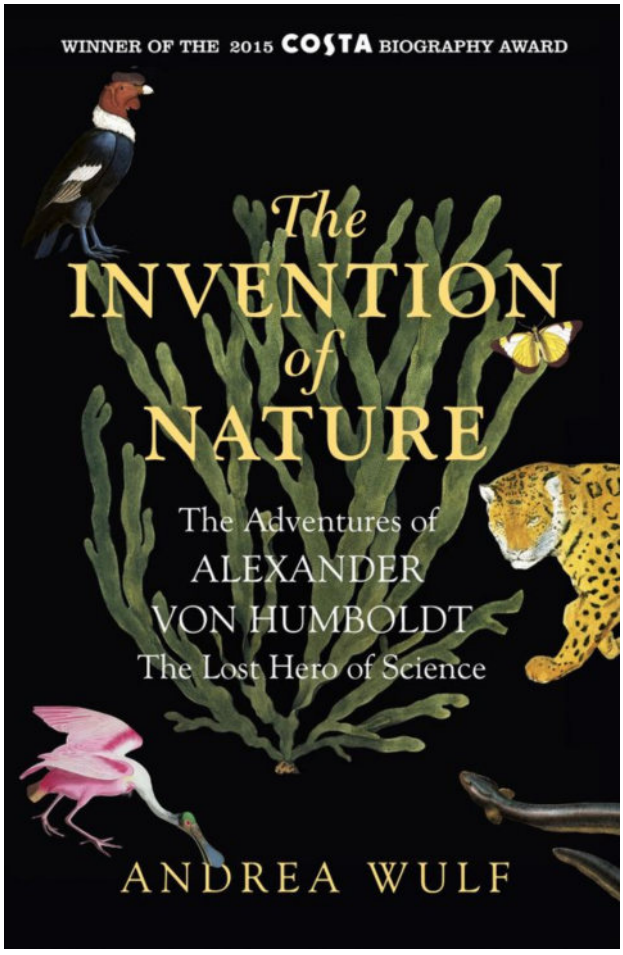
Books

Natural Sciences

The Invention of Nature

The adventures of Alexander Von Humboldt, The Lost Hero of Science

Andrea Wulf



To call Humboldt a genius and founder of many of the disciplines and principles we follow today in our pursuit of natural history would be a vast understatement. In his era he was known and loved by people throughout the world, standard teaching text books were based upon his writings and hundreds of place names named after him. From biogeography and exploration through to conservation and anti-slavery legislation, his legacy is profound and far-reaching.

I've met obsessives who collect every writing of Charles Darwin but Humboldt's work is far more significant in that he laid the groundwork for nearly every natural history related discipline, his books should lie to the left of ecology, conservation, geology, travel and pretty much everything else on your library shelves.

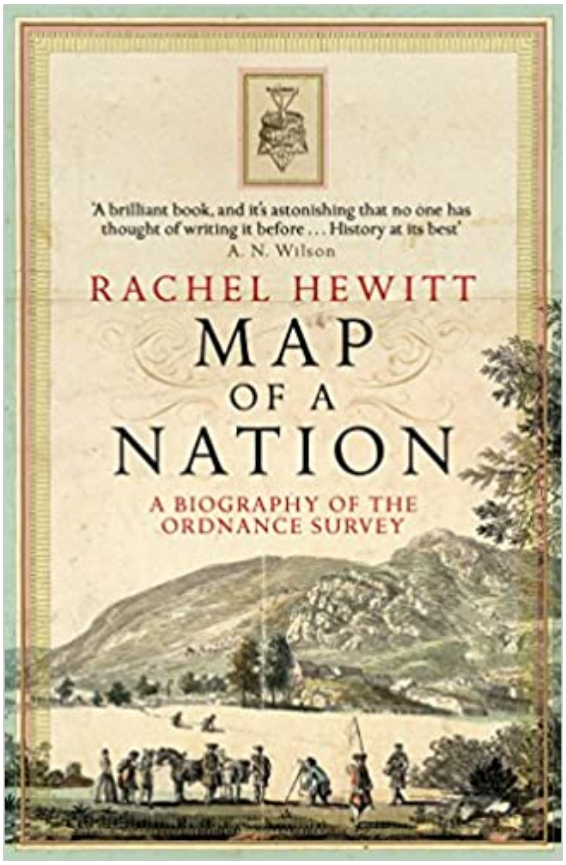
Andrea Wulf's biography is the place to start.

Darwyn Sumner

Cartography

Map of a Nation: A biography of the Ordnance Survey

Rachel Hewitt



Hewitt is an historian, the first few pages might be a little puzzling if you approach it as a mapper but she gradually draws in all the background information and spins her stories. What a host of stories there are too, from battles with the Scots, on and off cooperation with the French who invented the whole triangulation methodology and the man-years of tomography spent in Ireland. Now I know why so many rivers are called "River River" (Afon, Avon), ask a local what that river is called and they'd reply "river" in their own language.

What an indisciplined bunch they all were, "*Let's down tools and go and do Jerusalem instead*" - and off they all went. One of the reasons it took eighty years to do the first one-inch set of UK maps.

Did you know about the 1841 Fire of London when the Crown Jewels were rescued by police and firemen? It burned down the Ordnance Survey headquarters too - after they'd rescued most of their precious material.

With a good thickness of the book yet to read I was disappointed that we were brought up to date and only a little was devoted to the current Ordnance Survey. I was hoping to find out why the Channel Islands were so utterly neglected by Ordnance Survey but those last pages were references so I guess I'll have to look for yet another book.

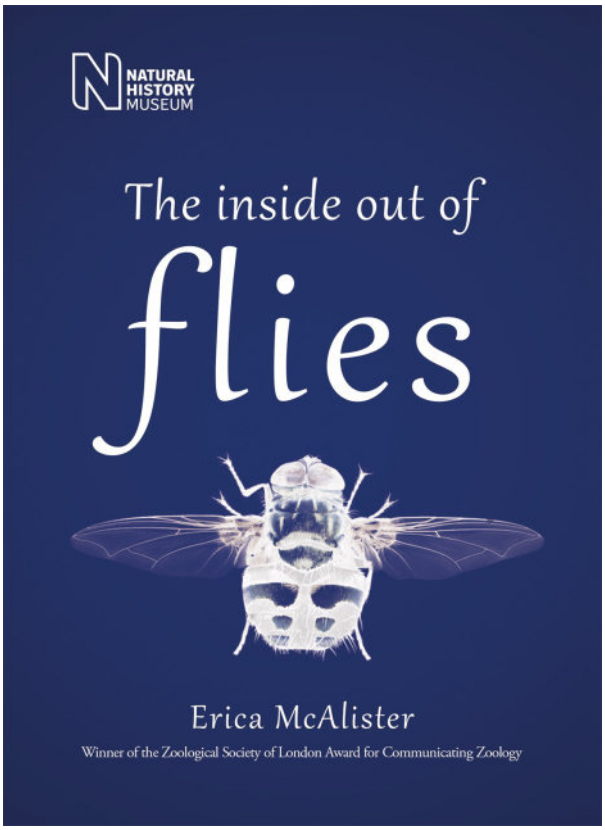
Darwyn Sumner

Diptera

The Inside out of Flies

Erica McAlister, 2020

Natural History Museum, London



This is Erica's second book on flies published by the Natural History Museum and follows the same format as the previous work. As its name suggests, it deals with the internal and external structures of flies and how these have been adapted to support a huge diversity of lifestyles. The book is liberally illustrated with diagrams and photographs, many of which are stunning stacked close-ups and photomicrographs.

In the introductory chapter Erica states that the book "aims to introduce the reader to the shape, structure and design of flies". I am not sure I would have chosen the word "design", with its connotations of Creationism, but I do feel the book achieves its aims admirably. The introduction continues with discussion of the concepts of species and their naming, and then moves on to diversity.

The second chapter introduces the reader to the pre-adult stages and pays particular attention to the diversity of lifestyle and form in the larval stage. This is illustrated with some fascinating examples. I particularly liked the anecdote about the venomous larvae of *Tabanus punctifer*. In fact the book is liberally enriched with anecdotes, both of Erica's own experiences as well as those of other dipterists. She also adds amusing asides, quite non-scientific, but this helps make what could be quite a dry subject much more lively and enjoyable. This is not to say that the book is trivial in its approach. Erica introduces some quite challenging concepts and uses a lot of technical terms. These terms are clearly explained within the flow of the text rather than in a glossary. I found this very helpful as many of the terms used were new to me as a non-biologist. Erica also references the scientists who made the discoveries that she describes. There is a "Further Reading" section at the back of the book giving the references used so that one can follow up on topics of particular interest. This provides a real feeling for the amount of research that is going on in diptera and of the possible wider benefits for technology that this work is uncovering.

Subsequent chapters take various parts of the fly in turn and discuss the main functions of the part before describing examples of how these have diversified to enable the huge range of lifestyles and exploitation of niches that the diptera have managed to achieve. In turn, the chapters cover the head, the antennae, the mouthparts, the thorax, the wings, the legs, the abdomen and the terminalia. If, like me, you have wondered about some of the outlandish structures one comes across when identifying a fly, this book is a good place to start to find out about them.

My review was based on a pre-print pdf file of the book and it did contain quite a few typographical and other errors. I hope these can be corrected before printing as they do not reflect well on the editorial team at the NHM. In most cases the errors are trivial but, for example, on page 43 the Ceratopogonidae are described as "non-biting midges". I do hope somebody tells the midges that before I next visit Scotland! However, these minor irritations aside, I did thoroughly enjoy the book and will keep referring back to it as I continue my studies. I am sure many Dipterists Forum members will feel the same about it.

John Showers

Hoverflies of Saddleworth

Ken Gartside, 2020

Last time I saw Ken was as a wedding guest on a date I'm supposed to remember each year but was some time in 1974, I think.

His account of 105 species mostly illustrated by photographs is fascinating, especially because it comes from what was my home patch for many years. It brought back memories of exploring Dick Clough with Leonard Kidd and Uppermill canal with Roy Crossley. We all failed to find *Callicera rufa* and *Sphegina sibirica* back then, it just shows what delights might be encountered wherever you explore.

It's good to see the power of local natural history societies being exercised through publications in this way. The north-west hotspot is in good hands still I see.

The photographs from Ken's book are all on a Flickr album at https://tinyurl.com/y478mslm

Darwyn Sumner

Science, publishing & bias

Science fictions: Exposing Fraud, Bias, Negligence and Hype in Science

Stuart Ritchie, 2020

From Piltdown Man and the Loch Ness monster to colour variants published as true species. No science sector is immune but those examples are a book yet to be written.

The tales told in this book are equally wonderful though. Ritchie's profession as a psychologist gives him access to some incredible stories and include horrendous frauds, especially in medicine, which have cost countless lives. If you have any sense of schadenfraude at all then you will truly enjoy the way that the author **slams respected scientific journals, publishers, universities and the peer-review system**.

I picked up on this via a BBC Inside Science radio show in which Elizabeth Bik featured. Turns out she's one of those super-recognisers who crop up rarely in our field, capable of spotting doctored images at a glance. No computer algorithm can come close to her abilities so you can dismiss any ideas of automated computer species recognition. She's responsible for pointing out fraud in a huge number of papers, one author having had an incredible 183 papers retracted.

Though fraud is likely to be less frequent in our sector because it's impoverished and doesn't rely for its funding on grants and sponsorship, Ritchie's section on bias gives food for thought on all sorts of areas we work in. Money is not the only reward.

Publication bias is relevant to us of course, this is the tendency to report only unusual things, the "file-drawer" problem or "*why do studies always find something rather than nothing*", we're all guilty of ignoring common species and only recording the unusual - ask the Hoverfly Recording Scheme. If you ever have to work with measurements (unusual in taxonomic work but it does happen e.g. phenology) then Ritchie's explanation of p-values is superb. It seems 89% of authors fail to understand what it means. Folk's inability to grasp even basic probability is the basis of a huge lucrative industry.

Ritchie has examples from a huge range of science disciplines but seems to avoid taxonomy and the natural life/ environmental sciences; maybe that's because they are hopelessly rife with them. For example:

Rognes, K. (2014). Grossly Inaccurate Biodiversity Data: An Example from Italy Regarding Blowflies (Insecta, Diptera, Calliphoridae). Bulletin of the Museo Civico Di Storia Naturale Di Venezia, (65), 103–120. [**retractions**]

Meier, R. (2017). Citation of taxonomic publications : the why , when , what. Systematic Entomology, 42, 301–304. https://doi.org/10.1111/syen.12215 [**hype**]

Bezzi, M. (1895). Contribuzioni alla Fauna Ditterologica Italiana. Bulletino Della Societa Entomologica Italiana, 27, 65. [**zombie taxon** - as the author suggested at the time]

A worthy companion to Ben Goldacre's **Bad Science** and very relevant to us**.**

Darwyn Sumner

Countryside and humans

The Accidental Countryside

Stephen Moss, 2020

Imagine purple prose phrases such as "*I could see the pale blue eyes and the lattice-like wings, laced by the late afternoon sun with tiny shards of gold*" used liberally in a New Scientist article on particle physics or astronomy. Intolerable in one Science sector but apparently the norm in another, to which it does a disservice. For a hard-hitting exposé of conservation travesties, you'll need to tune it out. These pop-science books can be interesting though, particularly for those with a fondness of birds, of which there are a lot here.

There are several topics in this book for which one could readily find equivalents in every county in the UK, they will be familiar to anyone working in the LERC sector. But is this hard-hitting? A few tales of roadside verge destruction are hard, golf is soft (except Trump), building development selectively soft, brownfield sites interesting though hardly comprehensive and urban open space strong. Local authorities and politicians get a lot of stick for bad practise or hypocrisy.

Moss's choice of examples and superficial examination of some makes this a fairly unbalanced account. On the one hand, occasional criticisms such as "*Today all those who visit Avalon Marshes, and bring in so much revenue to the local economy, bear witness to the fact that the NFU and its supporters were, quite simply, wrong, and the conservationists right.*" and his castigation of other anti-nature groups and individuals are severe. Similarly his defence of "home patches" (life-savers in recent months) are equally positive. On the other hand the book fails to examine many topics adequately, for example taking an unsubstantiated swipe at Falconry, makes it look as though there is a controversy, though for over 30 years there hasn't been one, thanks to falconers.

I was hoping for a balanced analysis with revealing statistics for the whole of the UK on a range of topics. I'll keep looking.

Darwyn Sumner

Anthropogenic era

Life changing: How humans are altering life on Earth

Helen Pilcher 2020

Lots of different animals involved in this book of course but the quote "***I have nightmares about yellow fruit flies***" by CRISPR editor Kevin Esvelt regarding the use of gene-drives to push species to extinction should worry us dipterists.

Amidst her stories of an exponentially increasing rate of biosphere destruction, Pilcher offers many others of hope and encouragement. Highly recommended.

Darwyn Sumner

On my shopping list: ***The Book of Trespass*** by Nick Hayes, Bloomsbury, guardianbookshop.com £17.40. Visit righttoroam.org.uk Review in the next Bulletin.

Articles

Publishing practises

Chavan, V., & Penev, L. (2011). The data paper: a mechanism to incentivize data publishing in biodiversity science. BMC Bioinformatics, 12 Suppl 15(Suppl 15), S2. https://doi.org/10.1186/1471-2105-12-S15-S2

This is the key background paper relating to the practise of including the data when publishing a paper in our sector.

It begins: "*Free and open access to primary biodiversity data is essential for informed decision-making to achieve conservation of biodiversity and sustainable development. However, primary biodiversity data are neither easily accessible nor discoverable*."

So if you do publish a paper and you do want to somehow include the data, this paper will give you clues on how to do it and why it's important. For format see **World records** in this Bulletin.

Museums & collections

Spear, D. M., Pauly, G. B., & Kaiser, K. (2017). Citizen science as a tool for augmenting museum collection data from urban areas. Frontiers in Ecology and Evolution, 5(JUL), 1–12. https://doi.org/10.3389/fevo.2017.00086

Those DF members attending our AGM in 2009 may recollect the presentation by Chris Thompson of the Smithsonian Institution (Bulletin 69, p19) in which he showed a slide looking like a night view from space in which city lights showed clearly. In fact it indicated recording effort across the world, it was probably just a negative of all the GBIF records.

Recording effort clearly varied a lot across the globe and it's interesting to find out how other countries differ from ours. Some have multiple inputs (Finland, Netherlands), others are project-based (Australia, US) and many are simply absent.

"*The goal of this study was to assess whether citizen science can be a solution to the urban biodiversity data crisis for species with varying responses to urbanization*"

For the UK naturalist the perspective in this article may seem a little unusual. Here recording primarily arises from field naturalists. Elsewhere reliance is more heavily skewed towards museums as a source of biological records. This article provides a US perspective on those differences and indicates that declines in museum acquisitions may be best augmented by citizen science.

Wetland Diptera

Keiper, J. B., Walton, W. E., & Foote, B. A. (2002). Biology and Ecology of Higher Diptera from Freshwater Wetlands. Annu. Rev. Entomol., 47, 207–232.

An extraordinarily useful article if you have an interest in the ecology of Diptera or want to figure out life histories and biology. It studies a whole host of Dipteran families (oddly not Stratiomyidae) discussing habitat requirements for each and gives many clues as to where to find stuff and what they might feed upon. This is a "must have" document and one which should be read and cited in many articles written for Dipterists Digest. It's also a very good read.

I got it from Researchgate at https://tinyurl.com/sv2rdre

Virtual Books

Royal Entomological Society

Diptera Virtual Issue

The RES has produced a collections of papers drawn from their journals as virtual reads.

Obtain it at https://tinyurl.com/y7czyh72

Volucella zonaria **[John Showers]**

Meetings

Regional Groups

Northants Diptera Group

Just before we were due to start our field meetings the lock-down came into force. At the time of writing in mid-July we had not had a group meeting. However as individuals we have been doing some field work and there have been some interesting finds. The range expansion of *Bombylius discolor* has continued with records from Daventry (Clare Topping) and the North end of Sywell Reservoir (Jim Dunkerley) as well as from the established area of last year. The Sywell record is significantly further North and East of any previous records in the county. We are lucky that we had naturalists living in these areas to find the flies. I could find none round my house about 10 miles further North than Sywell.

During lock-down I examined a lot of preserved flies that had been taken in flight interception traps in old trees at Yardley Chase during 2018. The only significant find was of the cranefly *Rhipidia uniseriata*. More details can be found in Cranefly News.

A couple of species of soldierfly normally associated with coastal marshes were recorded. *Stratiomys singularior* was swept at Yardley Chase (John Showers) and photographed at Summer Leys Nature Reserve in the River Nene Valley (Robin Gossage). *Odontomyia ornata* was photographed in the Nene Valley (Robin Gossage) and reared from a larva taken at Yardley Chase (Graham Warnes). Graham has provided photos of the larva, pupa and adult.

A Cambridgeshire visitor to Fermyn Woods, coming to see Purple Emperor, found and photographed the hoverfly *Callicera aurata* (Vic Brown). This is only the fourth county record. Stuart Ball swept the rare Tachinid *Freraea gagatea* at Ring Haw Nature Reserve in the North of the county. More details in Dipterists Digest.

John Showers

Reports

Diptera Workshop 2020

Picture-wing Flies

Preston Montford Field Studies Centre

14-16 February 2020

This year Dave Clements and John Showers teamed up to take us through the picture-wing flies, and once again numbers were high enough to run two parallel classrooms. Also a repeat from previous years was the excellent service and warm welcome provided by all the Field Studies Council staff at the Preston Montford centre; our thanks to them all.

This year we took the unusual step of awarding 3 bursaries to Joshua Wells, Charles Griffiths, and Aaron Bhambra. Happily Joshua and Aaron have found the time to write a few words, giving us their impressions on this their first DF Identification workshop.

From Joshua Wells:

> It was fantastic to be given the opportunity to come along to the Picture-wing Flies workshop at Preston Montford. The weekend for me combined a unique learning experience of an interesting and charismatic group of flies with being able to meet and become further engaged by the Dipterist Forum community.
>
> Dave and John gave a brilliant account of the families covered in the workshop and I can't believe how much I took in over the weekend. I was able to learn what to expect to turn up on my fly-finding forays and what I could look for. For example, a site nearby to me is well known for being one of the few places in Hertfordshire to have Mollinia tussocks . As a result of this workshop I have been on several stop-offs here to check for *Opomyza lineatopunctata*. No luck yet but I won't be deterred!
>
> Without the bursary attending the workshop simply wouldn't have been feasible for me so I can't stress enough how grateful I am for the support and encouragement of everyone involved.

From Aaron Bhambra:

[Aaron split his weekend between the Picture-wing workshop and the Introduction to Hoverflies workshop]

> Before attending this workshop, whenever I saw a fly, I would dismiss it as a distraction from what I really sought, a charming Aculeate. But a weekend away at Preston Montford can change the way you see the little things and the DF Workshop weekend was one of those experiences. I should start by commending the members and tutors at the Dipterists Forum for their time, patience and knowledge, this was my first meeting with many of you and I felt incredibly welcome and glad to be there.
>
> To anyone who does not study them, the task of learning about Flies can be daunting even to someone experienced in other invertebrate taxa. But the teaching during this weekend broke down those barriers, making something incredibly complex seem

far more achievable, even for a novice! What struck me immediately about these Flies, were the ghostly, alien like forms of many species. The breadth of diversity for colour, shape and form is quite staggering and truly represents how successful a group they are. I remember vividly the dark patterned patches on the eyes of some and characteristic ink droplet splodges peppering the wings of others.

It was great fun and I would not have been able to attend without the bursary, for which I am very grateful. I would recommend the Picture Wing and the Hoverfly workshops to anyone even slightly interested in learning more about these very charming and mysterious creatures.

The weekend was wrapped up with a vote of thanks to Martin Drake who was stepping down as indoor meetings secretary, and indeed, from the DF committee. Chairman Rob presented Martin with a specially commissioned, and very beautiful, illustration of *Scellus notatus* by the artist Dawn Painter, and a well deserved round of applause.

Looking back on the workshop through the strange lens that is lock-down, it seems it was a charmed weekend. Participants arriving with only flies and a change of clothes, and departing with only laundry and knowledge.

Thanks go to the Liverpool Museum for agreeing the loan of the reference specimens used over the weekend, and to Phil Brighton for couriering the specimens to and from Preston Montford.

Zoe Adams (all photographs Mike Ashworth)

Forthcoming

Annual General Meeting

Saturday 21st November
The Natural History Museum, London

The Agenda for the 2020 AGM is given below. Please note that due to Covid-19 it is not certain that Dipterists Day will be held in its usual form this year, updates will be posted on the DF website. The Chairman explains the alternative arrangements for the election of officers and committee members, should Dipterists Day not go ahead, elsewhere in this issue of the Bulletin. Jane Hewitt (DF Secretary).

The Chairman will open the AGM at 12:00 noon

Agenda

1. Apologies
2. Approval of the Minutes of the last AGM and matters arising
3. Chairman's Report
4. Treasurer's Report
5. Dipterists Digest Editor's Report
6. A.O.B.
7. Vote of Thanks to retiring committee members
8. Election of Officers and ordinary members to committee
9. Chairman's thanks to hosts and formal closing of the Annual General Meeting.

Chairman's notice:

As I write (mid-July) it is not clear that we will be able to hold our annual Dipterists Day as usual in November due to Covid-19. Since we usually hold our AGM on this day, we must make contingency provisions. The key matters we need under our constitution to address are approval of the annual accounts and the (re)election of officers.

The 2019 statement of accounts is included in this Bulletin, as approved by our independent examiner and committee. If any members wish to question this or to raise any concerns, please contact our Treasurer, Phil Brighton, before 1 January 2021. Committee will then decide how best to respond and on what, if any, action to take, so as to conclude the matter before 8 February 2021.

With regard to (re)election of officers, all committee members, including officers, are currently willing to stand for re-election where necessary, and Mark Welch has put himself forward for election. They are listed below.

Please contact me and our Secretary before 1 January 2021 if:

1. You wish to nominate someone for election to committee – he or she must have agreed to their name being put forward – or to put yourself forward for election. Candidates for election are welcome and indeed new committee members are desirable from a succession planning perspective.
2. You wish to stand for election to an officer post: here we will discuss and agree the best way forward. Applications to fill vacant posts will be welcome.
3. If you wish to oppose the re-election of an existing committee member.

If no committee posts are contested and there is no opposition to re-election of existing incumbents, then the requirements of our constitution will be deemed to have been fully met: committee members will be (re)elected without further ado and the matter recorded on our website and in the next edition of the Bulletin. If, however, one or more posts are reasonably

contested, or there is sound opposition to re-election, then committee will decide on the best way forward to uphold our constitution and ensure the proper governance of the society, so as to conclude the matter before 8 February 2021.

Robert Wolton
Chairman

List of committee members for (re)election

Officers

Chairman	Robert Wolton
Vice Chairman	Vacancy
Secretary	Jane Hewitt
Treasurer	Phil Brighton
Membership Secretary	John Showers
Indoor Meetings Secretary	Zoe Adams
Bulletin Editor	Darwyn Sumner
Assistant Bulletin Editor	Judy Webb
Dipterists Digest Editor	Peter Chandler
Publicity Officer	Erica McAlister
Website Manager	Martin Harvey
Conservation Officer	Mark Welch (new committee member)
Training Coordinator	Marc Taylor
Ordinary Members	
Stuart Ball	Victoria Burton
Matt Harrow	Chris Raper
Malcolm Smart	
Already elected (2019)	Tony Irwin

Annual Meeting

Dipterists' Day 2020

Saturday 21st November
The Natural History Museum, London
Cromwell Road, London, SW7 5BD

Plans have been made to hold this year's meeting at the Natural History museum London, in the Neil Chalmers suite inside the Darwin Centre.

Covid-19 Health Warning:

Obviously 2020 has not turned out to be a typical year, and it may prove wiser to hold this year's event as a virtual on-line meeting. At the time of writing (July) a final decision on whether to meet in person, or not, has been set for early September. If you are reading this in October, our decision on the type of event, and logistical guidance for those wishing to take part will already be available on the Forum website (https://www.dipterists.org.uk/).

Expressions of Interest:

This year, more than ever, it would be helpful to have an accurate idea of how many plan to take part, so please do contact the indoor meetings secretary Zoe Adams, at Z.Adams@nhm.ac.uk

DIPTERISTS DAY PROGRAMME

10:00 Arrival

10:30 Welcome and orientation
Zoe Adams

10:40 Darwin tree of life project; Sampling plans and progress so far.
Lyndall Pereira

11:00 Darwin tree of life project: Molecular techniques.
tbc [NHM/Sanger]

11:20 tea & coffee break

11:40 Darwin tree of life project: implications for UK Diptera.
Zoe Adams

12:00 AGM – see separate agenda

13:00 lunch break

14:00 Prize giving – award for best exhibit.

14:10 New UK Sarcophagidae recording scheme
Daniel Whitmore

14:40 New Rhinophoridae recording scheme
Ryan Mitchell

15:10 tea & coffee break

15:40 Brickopore workshop: All your DNA sequencing questions answered through the medium of Lego!
Andie Hall

16:20 Close

Visit to the NHM Collections

Regrettably the museum has had to take the decision to close its collections to visitors for the time being and Forum members will not be able to view the national collections after the annual meeting. The environmental conditions inside the collections store would extend the survival time of any virus deposited, and disinfecting all the surfaces inside the store would be a lengthy task.

Summer Field Meeting

Falmouth

26th June to 3rd July 2021 (Saturday to Saturday)

We are now holding the planned 2020 meeting in Cornwall in 2021, having postponed the event due to the Covid-19 epidemic. We will be based at Exeter University's Penryn Campus near Falmouth. The DF last visited Cornwall in 2001 and we are looking forward to revisiting the area. It will be a chance for those of us living in land-locked counties to visit some coastal sites, but there will be plenty more of interest (see Alan's article in the Autumn 2019 Bulletin).

The cost of attending the meeting is unchanged from 2020 and will be £420 for a single room. If you wish to share a double room, the price for the full week is £280 per person. We have a small number of twin rooms available to share, again £280 per person. Be aware that these are student rooms, so might be rather cramped for two people. If you do wish to share a room, please arrange a roommate before booking and inform us who they are when you book.

What's provided?

A room in Glasney Parc, Penryn Campus. All rooms are en-suite (with shower). Desk space is available (except in shared twin rooms).

Use of a kitchen. These are shared between seven rooms and contain a fridge-freezer, kettle, toaster, etc. for lunch preparation.

Full breakfast and two course evening meal (vegetarian option available, self-service cafeteria).

Access to a workroom for specimen pinning, meetings etc. This will be located in a secure building adjacent to the Cafeteria.

We have a small number of half-cost bursaries for this meeting (applicants need to be Dipterists Forum members). For details, see elsewhere in this Bulletin and on our website.

We have block-booked 25 rooms. If we are holding your deposit from last year, your booking has been carried over to 2021. Therefore, if you are no longer able to attend please inform both the Treasurer and myself. We still have rooms available; to book a place on the meeting a deposit of £100 (per person) is required, with the remaining amount payable by 1st May 2021.

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 (Phil Brighton) and the Secretary, who will be coordinating the administrative arrangements.

For those who would to prefer to pay by cheque, this should be sent to the Treasurer. Again, please email the Secretary to let her know you are planning to attend.

Jane Hewitt, Secretary

Diptera Workshop 2021 Muscidae

Preston Montford Field Studies Centre, near Shrewsbury

Friday 19th – Sunday 21st February 2021

Tutored by: Howard Bentley

Details on the Field Studies website: from mid October (search Courses, then Individuals & Families, then Natural History).

At the time of writing the FSC had not set their pricing for 2021, but a slight increase on 2020 prices is possible.

Any members considering attended the Muscidae workshop should consult the FSC's published safety procedures for Covid-19 (https://tinyurl.com/y5px75v7) these include details of the financial assurances they are offering to anyone booked onto a course.

At nearly 300 species the Muscidae is the UK's largest Calyptrate family and identifying them to species presents considerable challenges. Howard will be collaborating with James McGill to make use of the considerable work done by James towards a new key for the group. Course handouts will include keys along with information on ecology.

The Dipterists Forum offers up to two bursaries for this course. Each bursary covers half the total cost including accommodation costs. If you would like to apply please see the separate advert about these bursaries in the Bulletin and on the Dipterists Forum website.

Dipterists Forum Core Events

See our website for many more

Events Calendar

Summer 2020 - Spring 2021

17 October 2020, AES Annual Exhibition and Trade Fair, Kempton Park, London Sunbury-on-Thames, TW16 5AQ, UK. Please check the website nearer the date to see if it is cancelled. See www.amentsoc.org

7 November 2020, BENHS Annual Exhibition and Dinner, Conway Hall, 25 Red Lion Square, Holborn, London WC1R 4RL. Please check the website nearer the date to see if this is cancelled. See http://www.benhs.org.uk .

18 November 2020 NBN Conference. Online, run in collaboration with iSpotnature, Faculty of STEM, The Open University.

21st November 2020 DF ANNUAL MEETING, Dipterists' Day, The Natural History Museum, London, Cromwell Road, London, SW7 5BD. Note this may be an online meeting – check the Forum website (https://www.dipterists.org.uk/) nearer the time.

19-21st February 2021, DF Advanced Identification Workshop. Muscidae **.** Preston Montford Field Studies Centre, Shrewsbury. Tutor Howard Bentley. Details & booking on FSC website: http://www.field-studies-council.org/prestonmontford . Please check the Forum website (https://www.dipterists.org.uk/) nearer the time

2021, DF Spring Field Meeting will be centred around The Broads (Norfolk and Suffolk). Organiser Tony Irwin. Please check the Forum website (https://www.dipterists.org.uk/) nearer the time.

26 June – 3 July 2021, DF Summer Field Meeting to Falmouth. Accommodation at University of Exeter Penryn campus. Details in this Bulletin. **We offer up to three Bursaries for this meeting.** Each bursary covers half the total cost including accommodation. If you would like to apply please send your application by email to Howard Bentley: jhowardbentley@gmail.com . Please check the Forum website (https://www.dipterists.org.uk/) nearer the time.

***Throughout the Year*:**

BENHS Dinton Pastures Open Days in the Pelham-Clinton Building, Hurst, Reading. These are cancelled until further notice. See http://www.benhs.org.uk .

The Northants and Peterborough Diptera Group hold meetings every weekend from end of April until sometime in September/October. See: northantsdiptera.blogspot.co.uk or contact John Showers on email: showersjohn@gmail.com

The Devon Fly Group will be holding regular field meetings throughout the year. Contact Martin Drake (01460 2206650, email: martindrake2@gmail.com).

Newsletter No. 25
Autumn 2020

Editorial

Here is another dolichopodid-biased newsletter. The bias reflects my predilection and lack of copy for the "E" part of the scheme, so if you want a broader read, please send us some contributions. For those of you who like a challenge, I've included a key to one of the least tractable dolichopodids that most people throw away – female *Teuchophorus*.

Dolichopodids from the Dipterists Forum meeting at Stirling, 22-29 June 2019

Martin Drake

Our records for the Stirling meeting were marginally down on the last few years, but still included a very respectable 97 species among nearly 6500 specimens from nearly 60 sites in 32 hectads. As in previous years, I am most grateful to the piles of flies given to me during the week – these make a big difference to coverage, and this time included several uncommon flies that I would not have found at the sites I visited.

Starting with these very restricted flies, *Dolichopus maculipennis* is a Scottish speciality from calcareous upland flushes. It was found at Ben Lawers, which is a known locality, but Nigel Jones found it at Meikle Kilrannoch, Acharn (NO2278) which represents an apparently new area for it (see map). For technical reasons (mainly that you have to climb above 600m on base-rich geology to find it), this obviously very rare fly is given Data Deficient status. The other upland Scottish species that requires some physical exertion to find is *Hydrophorus rufibarbis*, which is found above 500m on peaty pools and flushes, although is moderately widespread in the northern half of Scotland. We found it at Ben Lawers and Meall Nan Tarmachan (NN5838), which are at the southern edge of its range (bar one record). We found three uncommon species that are more frequent in Scotland than in the rest of Britain. *Rhaphium lanceolatum* is Near Threatened, and moderately widespread in the northern half of Scotland but very rare elsewhere: Blackwater Marshes (NN5406) and nearby Brig O'Turk Mires (NN5306). *Argyra auricollis* is thinly scattered in Britain but with a distinct concentration of records in the central part of Scotland from Stirling to southern fringes of Highland, curiously all falling within square NN, to which the present meeting added four more hectads. *Argyra elongata* is also more common in Scotland than in the rest of Britain (Lurg Loch, NT0996).

The remaining uncommon species are more frequent in England than Scotland so are probably of more interest to Scottish entomologists. The little *Sympycnus spiculatus*, like *D. maculipennis*, is restricted to base-rich sites which are usually seepages and river margins on limestone. It was found at Arrochymore NS4191 (Serpentine) and at Kippenrait Glen NS7999 and nearby Hermitage Wood (NS8197) which are both on basalt that weathers to give rise to base-rich soils. This species is thinly scattered in Scotland compared to a fairly dense distribution on the limestone hills of northern England. At the other pH extreme, on bogs and acid sites, was *Tachytrechus consobrinus* which is very scarce in Scotland and similarly thinly spread in much of Britain except in the southwest; the two Stirling records from Brig O'Turk Mires and Conic Hill (NS4291) make it look a little more widespread in Scotland.

Rhaphium elegantulum has two Scottish clusters, one in Speyside and the other where we were working in the belt across middle of country. It was plentiful at Blackwater Marshes in the extensive sedge swamp fringing the lake, and there was a single record from the lush seepages of Edinample Meadow (NN5922) close to Loch Earn. These large water bodies are in keeping with *elegantulum*'s frequent association with lakes, flooded pits and reservoirs.

I identified what I take to be *Achalcus vaillanti*, also at Blackwater Marshes, but it's a female and the key by Pollet (1997) was almost certainly based on alcohol-preserved material and sometimes does not work well with pinned flies. But I mention it in case someone cares to search for tiny yellow dolichopodids at this splendid site. If correct, this is only the third Scottish record. The commoner *A. flavicollis* is comparatively widespread, although rarely recorded, in Scotland; we had it at two sites on the Stirling meeting Devilla Forest (NS9687) and Flanders Moss (NS6197).

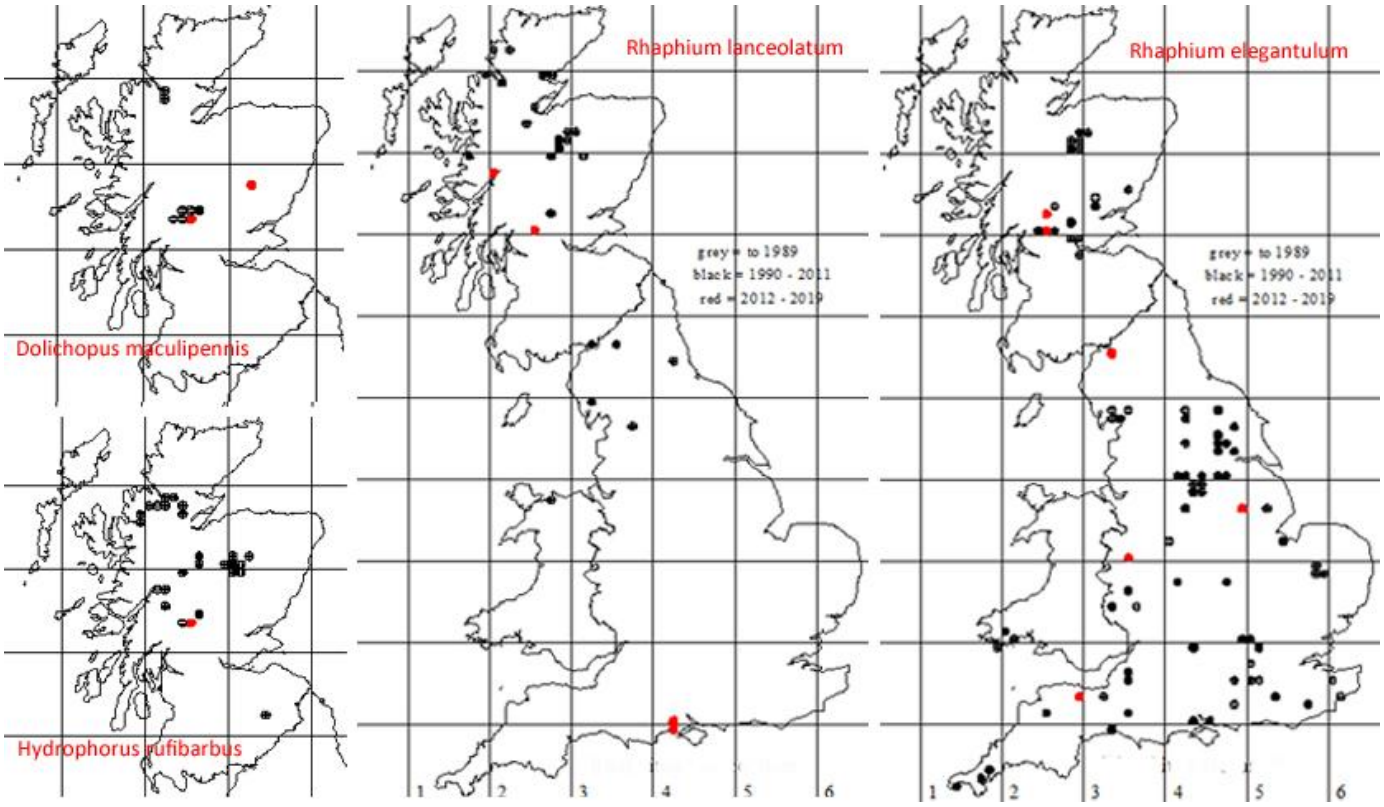
Medetera ambigua is one of the easier species to identify in this difficult genus as it one of the few with a glossy violet face. It was found on the trees by the lake in the university grounds where we were based. The lake's lushly vegetated margin was also where Alan Stubbs found *Teuchophorus nigricosta*, only the second Scottish site for it. It is widespread and hardly worthy of note in most of England but peters out near the border.

Saltmarsh at Kincardine Bridge (NS9286) and brackish lakes at Bothkennar Lagoons (NS9283) supported *Sympycnus septentrionalis* and *Syntormon pseudospicatum* in their expected habitat. The shortage of records of these 'Data

Deficient' species is the failure to separate them from their abundant look-alikes (*S. pulicarius* and *S. pallipes*, respectively) – by me too until recently.

In the Loch Lomond area (hectads NS48, NS49) where the wetlands appear to be more mesotrophic, we found *Dolichopus nitidus* and *Chrysotus* cf *pulchellus*. *D. nitidus* has an inexplicable distribution assuming records are correct, which is vaguely coastal in England and Wale (with exceptions) but inland in Scotland; it is a thinly spread and genuinely uncommon species. The *Chrysotus* is one of a look-alike pair that includes *pulchellus*. Is it undescribed or described but unrecognisable from the literature, which is quite likely for the poorly illustrated *Chrysotus*? ... and which of the two types is the true *pulchellus*? The species we found is the northern species; the other is southern. Work in progress .....

There were plenty of other species that are apparently uncommon in Scotland but two-a-penny in England, and too many to discuss here. The Dipterists Forum data from the Stirling meeting will be sent to the NBN Gateway.



Scoring the difficulty of identification

Martin Drake

Several years ago Glenn Rostron took on the job of verifying records for the Cheshire LRC, and asked me for a reckoner indicating the difficulty of identifying each species, for instance as Martin Harvey has for his British Soldierfly & Allies recording scheme. I gave Glenn an off-the-cuff list but, with c. 300 species and having to deal with males and females separately, it is too big to include here. I hope to make this available on the E&D page of the Forum's website when I've improved it. The job is not straight forward since scoring has to refer to currently available keys, some like Fonseca's being way out-of-date, and others do not work as well as they should. Of course, when the dolichopodid handbook eventually gets published, everything will be dead easy.

Newsletters available from DF website

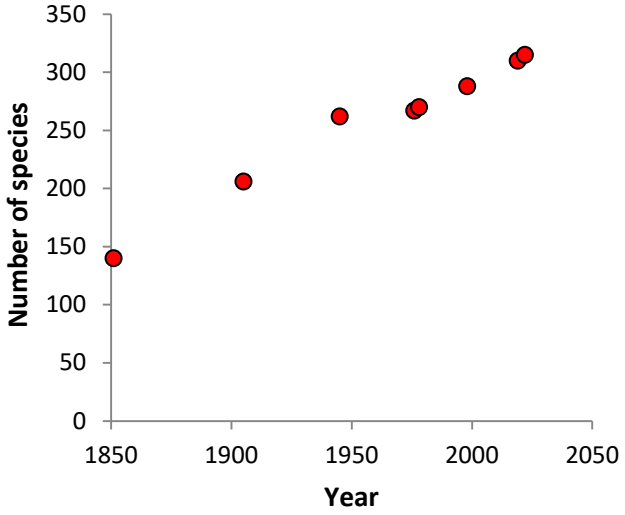
All the empid and dolichopodid newsletters (and all other scheme newslettes) can be downloaded as pdf from the Dipterists Forum website (www.dipterists.org.uk/recording-scheme-newsletters). Many thanks to Darwyn Sumner and Martin Harvey for this excellent resource. That's 35 years' of reading to catch up with!

The constant increase of British dolichopodids

Martin Drake

James Hutton's famous line " .... *no vestige of a beginning, no prospect of an end."* could be misappropriated for many natural phenomena. Here I do so for recording of dolichopodids in Britain since the earliest complete list (no vestige of a check-list before Walker, 1851) to the present day. The variation explained by the linear correlation between year and count, R^2=0.95, is far greater than most biological correlations and suggests no prospect of an end to the number of dolichopodids that may be found in Britain. However, like Hutton's 18th century attempt to estimate the age of the earth using then-known geological processes, I am certain to be proved wrong. But I hope that the graph stimulates you to keep recording, and don't assume that Fonseca's key (267 species) will give you the right answer.

I've added *Microphor* to these totals, and my 2020 value includes species not yet formally published. I have not adjusted for species that have been synonymised but the overall pattern will not change much, except perhaps early lists are over-estimates, in which case an asymptotic curve could be more realistically fitted.



Number of dolichopodids in Britain over 170 years.

Source	No. of Species
Walker 1851. *Insecta Britannica*	140
Verrall 1905. *List of British Dolichopodidae, with tables and notes.*	206
Kloet & Hinks 1945. British Dipt. Checklist	262
Kloet & Hinks 1976. British Dipt. Checklist	267
d'Assis Fonseca, 1978. RES Handbook	270
Chandler 1998. British Isles Dipt. Checklist	288
Chandler 2019. British Isles Dipt. Checklist	310
Drake 2020. Best guess	315

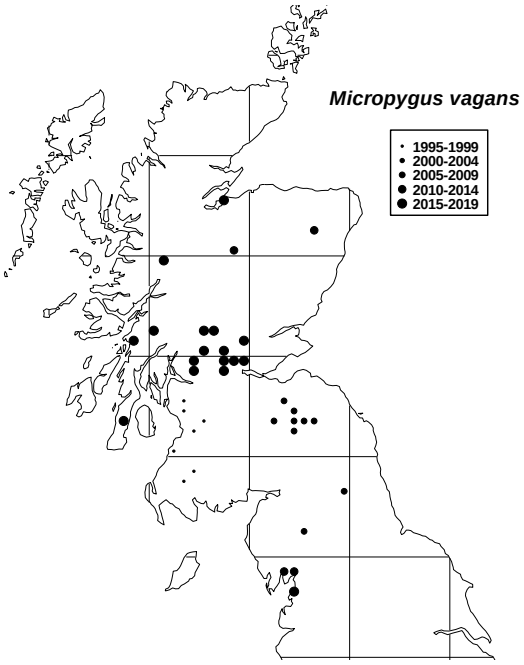
Micropygus vagans Parent (Dolichopodidae) update

Martin Drake

In *E&D Newletter* **19**, 1 (2014), I summarised the spread of this New Zealand species. Here's a new map with records divided into 5-year blocks. The earliest spate of records (tiny dots) were made at the Dipterists Forum summer meeting based at Ayr in 1995, and the latest batch in central Scotland (biggest dots) are mainly from the 2019 DF meeting based at Stirling. Rob Zloch found the southern-most record, from Lancashire in 2019. It has clearly spread widely and quickly, although of course we don't know what we had missed before Peter Chandler (1988, 1999) first alerted us to its presence in the British Isles (from Ireland). It's a dull little fly that you might mistake for a *Campsicnemus* but its wing has a pale crossvein that looks like a white spot. Rob Zloch has a good photo of one of his males at http://www.northwestinvertebrates.org.uk/2020/03/

Chandler, P. 1988. Three Campsicneminae recently discovered in Britain and Ireland. *Empid and Dolichopodid Study Group Newsheet* **5**, 6.

Chandler, P.J. 1999. *Micropygus vagans* Parent (Diptera: Dolichopodidae), a New Zealand fly in the British Isles. *British Journal of Entomology and Natural History* **12**, 215-220.



Recent literature (dolichopodids)

Chursina, M.A. 2019. Convergent evolution of sexual dimorphism in species of the family Dolichopodidae (Diptera). *Biodiversitas* **20**, 2480-2485.

Chursina, M.A. & Grichanov, I.Ya. 2019. Analysis of the differences between *Syntormon pallipes* and *S. pseudospicatus* (Diptera: Dolichopodidae): morphological and molecular data. *Zoosystematica Rossica* **28**, 305-316.

Chursina M.A., Negrobov O.P. 2020. Legs morphometric characters of the *Dolichopus* Latreille, 1796 species (Diptera, Dolichopodidae). *Samarskii nauchnyi vestnik* **9**, 106-112.

†Crossley, R. 2019. Notes on the sub-family Hydrophorinae (Diptera Dolichopodidae) in Yorkshire. *The Naturalist* **144**, 6-11.

†Crossley, R. 2020. Notes on the genus *Rhaphium* Meigen, 1803 (Diptera Dolichopodidae) in Yorkshire. *The Naturalist* **145**, 67-73.

† These two papers have not yet been released on the YNU website but pdfs are available from Roy Crossley (roycrossley@btinternet.com)

Drake, C.M. 2019. *Nematoproctus praesectus* Loew (Diptera, Dolichopodidae) new to Britain, found together with *N. distendens* (Meigen), and notes on their habitat preferences. *Dipterists Digest (Second Series)* **26**, 151-160.

Drake, C.M, Crellin, S.M., Jones, N.P., Spilling, C.R. & Wolton, R.J. 2019. Diptera at two inland saltmarshes in Cheshire and Staffordshire. *Dipterists Digest (Second Series)* **26**, 73-79.

Kechev, M. 2019. Predatory flies of the family Dolichopodidae (Diptera: Empidoidea) from forest and riparian habitats in Bulgaria. In: *Proceeding Papers "150 Years of Bulgarian Academy of Sciences". Sofia* , 47-54.

Selivanova, O.V., Negrobov, O.P. & Maslova, O.O. 2019. New data on the systematics and fauna of *Dolichopus subpennatus* D'Assis Fonseca, 1976 and *Dolichopus pennatus* Meigen, 1824 (Dolichopodidae, Diptera). *Acta Biologica Sibirica* **5**, 111-114.

Zloch, R. 2020. *Micropygus vagans* (Diptera) reaches north Lancashire. North West Invertebrates blog 43903.

Key to female *Teuchophorus* (Dolichopodidae)

Martin Drake

This is a draft for the forthcoming handbook. d'Assis Fonseca's key (1978) works if you are lucky but will fail as often as it works. After a bit of a struggle, I have associated females with males and worked out what they look like. I took several standard leg measurements (tibia, tarsal segments, etc) of 11–14 specimens of each species and put them through principal component and discriminant analyses. While *simplex* was clearly different from the others using these measurement, *monacanthus* and *spinigerellus* formed one unseparable groups, and *calcaratus* and *nigricosta* formed another such group. However, the first of these pairs are easily separable on other characters, whereas the second pair are not. My key will therefore sometimes fail but perhaps less often than Fonseca's – at least the first three species should be easily identifiable (*spinigerellus* is the only one with a violet frons, *monacanthus* is the only one with clearly dark coxae and metepimeron, and the rest have pale coxae and metepimeron but, of these *simplex*, has relatively long hind tibia 4 times longer than the basitarsus rather than less than 3.7x in the other two). Everything is variable and I have specimens that I cannot identify. Reliance on careful measurement of lengths helps but is off-putting and there is plenty of overlap between species. Hairs and dusting are usually workable characters on tidy specimens. Apologies if you have not caught up with the latest morphological terms (tarsomere = tarsal segment; metepimeron = sclerite above hind coxa).

1 Hind femur in basal half with dorsal fringe of longer hairs at base, as long as *tibia* (not femur) shaft's width, grading to shorter distally; hind basitarsus slightly shorter than second tarsomere (0.7–1.1 times but rarely >1.0); hind tibia relatively longer than basitarsus (3.5–4.6 times, rarely less)..... 2

- Hind femur dorsal fringe scarcely differentiated, hairs much shorter than *tibia* shaft's width; hind basitarsus slightly longer than second tarsomere (0.9–1.1 times but rarely <1.0); hind tibia relatively shorter than metatarsus (3.0–3.7 times, rarely more). 4

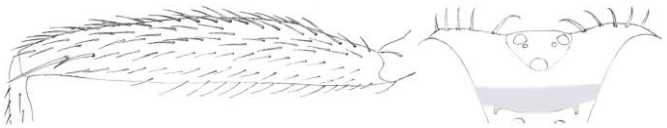
2 Frons vivid metallic violet, almost glossy, dusting restricted to narrow anterior strip; dorsal fringe of hind femur of two rows of equally long hairs. ..... *spinigerellus*

- Frons green or greenish-blue, but not steely purple-blue, either shining or extensively dusted; dorsal fringe of hind femur of a single row of long hairs, adjacent rows with obviously shorter hairs. 3

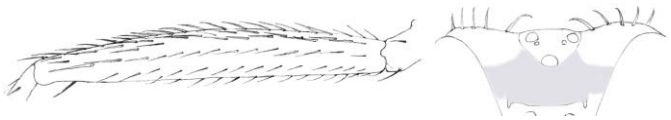
3 Mid coxa and sometimes hind coxa darkened, at least basally, metepimeron dark, hind femur with extensive dark smudge dorsally; hind tarsus mainly dark; mid coxal setae and hairs slightly browner; hind tibia relatively shorter than basitarsus (3.6–4.1 basitarsus length); front basitarsus relatively longer than second tarsomere (2.2–2.9 times). [Frons extensively dusted, leaving separated small shining lateral areas, as *nigricosta* below]..... ..... *monacanthus*

- Mid and hind coxae, hind femur and metepimeron clear yellow; hind tarsus mainly yellow; mid coxal setae and hairs pale yellow; hind tibia relatively longer than its basitarsus (4.1–4.6 times longer); front basitarsus relatively shorter than second tarsomere (1.8–2.3 times) [Frons mainly shining, dusting restricted to narrow anterior strip, as *calcaratus* below.] ..... *simplex*

4 Hind femur with pale ventral hairs almost as long as dark dorsal hairs, easily discernible; frons sub-shining and scarcely dusted either side of ocellar triangle and for half distance between front ocellus and antennae, dense dust restricted to strip just behind antennae, better seen in oblique lateral view. [front basitarsus with ventral hairs usually as long as shaft's width, but may sometimes be shorter.] ..... *calcaratus*



- Hind femur with pale ventral hairs clearly shorter than dorsal dark hairs and very fine; frons dusted from antennae to front ocellus, but sub-shining either side of ocellar triangle. [front basitarsus with ventral hairs usually shorter than shaft's width.] ..... *nigricosta*



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martindrake2@gmail.com

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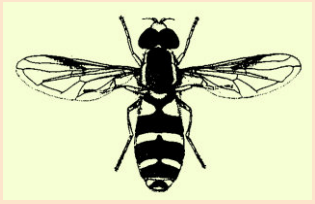

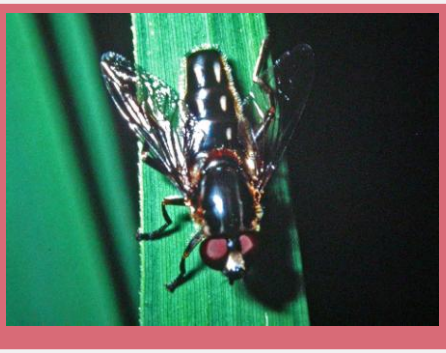

The early weeks of the lockdown featured glorious weather, especially in April, but I recorded very few hoverflies on my daily walks. The situation in my garden was somewhat better, with *Chrysotoxum cautum* being active almost daily from 2 May until 1 June (following the similar prolonged presence of this species there in 2018 and 2019, as described in **Hoverfly Newsletter No. 66**)

Copy for **Hoverfly Newsletter No. 69** (which is expected to be issued with the Spring 2021 Dipterists Forum Bulletin) should be sent to me: David Iliff, **Green Willows, Station Road, Woodmancote, Cheltenham, Glos, GL52 9HN, (telephone 01242 674398), email:davidiliff@talk21.com**, to reach me by 20 November 2020.

The hoverfly illustrated at the top right of this page is a male *Lejops vittatus*

Hoverfly Recording Scheme Update – Autumn 2020

Stuart Ball, Roger Morris, Joan Childs, Geoff Wilkinson & Ellie Rotheray

We have had a very busy winter and spring! The numbers of records uploaded into RECORDER have been such that when Stuart tried to import some 70,000 records from iRecord the system fell over. In other words, there were too many records for Recorder 2002 to handle and a new platform was needed! So, with some trepidation Stuart embarked on what turned out to be an epic match trying to upload the dataset into the Recorder 6 format! After a long struggle he succeeded but it took plenty of ingenuity. He has written up the procedure in case others find it necessary to do the same.

The overall dataset now stands at a little over 1.3 million records, although there is some duplication (especially as some iRecord users seem to be uploading data that we already have). Since that battle, a further 20k records have been verified on iRecord and we also have a couple of dozen more spreadsheets to import. This growth in the dataset means that as far as we can tell, the HRS dataset is the third largest for British invertebrates after Lepidoptera and Odonata; an amazing transformation for a group of flies that were once considered too difficult for all but serious specialists to tackle.

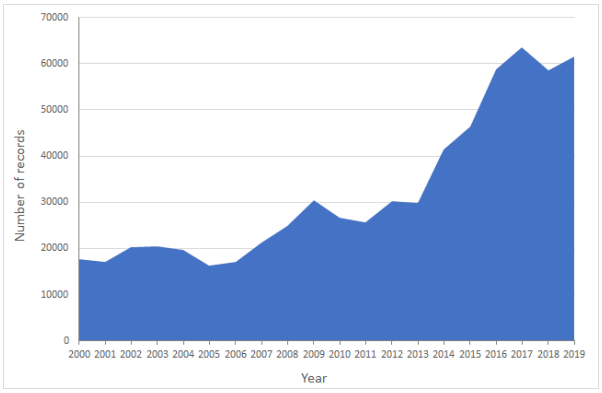

Figure 1. The numbers of records on the HRS database. These totals are for all records and have not been filtered to exclude duplication.

When the Coronavirus lockdown was announced in March 2020 it might have been expected to have had an adverse effect on recording this spring. We need not have worried; if anything, recording has benefitted both in terms of numbers of recorders and the numbers of records received. Furthermore, the numbers of species recorded held up well, although some specialists such as *Portevinia maculata* would not have been reported so frequently because it was not possible to visit many suitable sites.

There can be little doubt that lockdown has stimulated increased interest in observing and recording hoverflies. The numbers joining the Facebook group have been phenomenal, with 429 new members accepted over the period 23 March to 17 June (but 69 members have also resigned). Equally, the number of full records generated directly onto the running spreadsheet greatly exceeds 2019, with 11,788 records between 23 March and 14 June 2020 compared with 8,729 in 2019. This difference is illustrated in Figure 2 which also shows how numbers of records fluctuate greatly. These fluctuations seem largely to be weather-related but there is a slight correlation with weekends too.

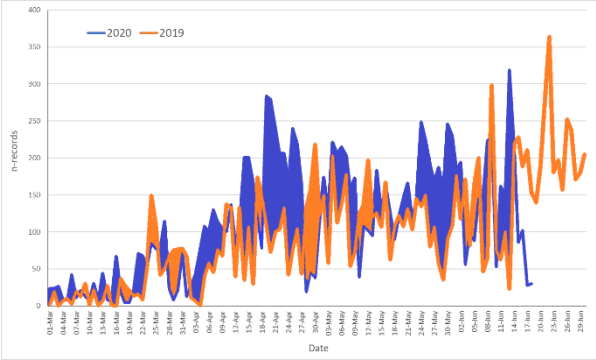

Figure 2. Numbers of records extracted directly from the UK Hoverflies Facebook group in 2020 compared with 2019. Areas in blue are those where the 2019 levels have been exceeded.

Making sense of the effects of lockdown is not straightforward. There are differences between 2020 and preceding years but as the information to date largely comes from the Facebook group it is difficult to be sure whether they simply reflect the increased interest in recording. Moreover, it is possible that the exceptionally sunny spring has also been an important factor in the numbers of records submitted.

To illustrate this point, we have compared the contribution of *Eristalis pertinax* to the Facebook dataset this spring (to 14 June). It seems that this species was observed far more frequently in 2020 and many observers have commented that they thought it was commoner. Some caution is needed, however, because this analysis works on the proportion of records and if the numbers of species recorded have been affected by the greater emphasis on recording from gardens, this variation may simply be a recording anomaly.

The biggest surprise, however, has been the numbers of species reported by photographic recorders in 2020. Bearing in mind that most people's gardens are far less productive than a wildlife site, the numbers of species recorded have remained high and at least comparable with 2019. Quite how the data will look when all spreadsheets have been uploaded at the end of the year remains to be seen.

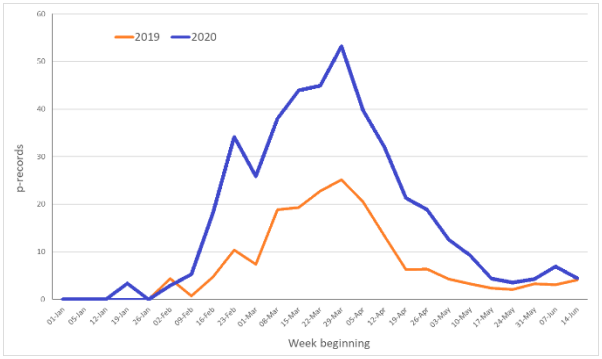

Figure 3. The contribution (p-records) of Eristalis pertinax to the Facebook dataset in 2020 (blue) compared with 2019 (orange).

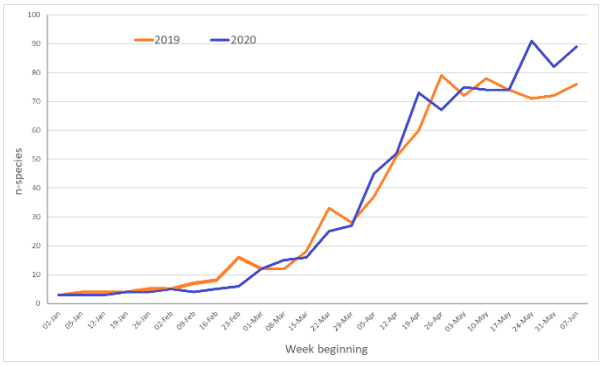

Figure 4. Numbers of species reported by Facebook group members in 2020 (blue) compared with 2019 (orange).

As usual, the Facebook group has provided new and interesting insights into hoverfly distribution and ecology. Highlights include a record of a *Helophilus* photographed by Nick Addey on 27 September 2019 in the beak of a Melodious Warbler on Out Skerries HU679717 and a report (& photographs) by Pete Kinsella of a male *Callicera rufa* at Formby SD279057 on 20 May 2020 associated with Corsican Pine. These individual records and the overall growth in recording demonstrate the power of the internet as a way of increasing interest in hoverflies and other invertebrates.

It looks as though *Callicera rufa* occurs in many more southern locations and will be found if an effort is made to locate it. For example, Roger Morris investigated Leith Hill in Surrey in May and after about 45 minutes located two males about 10 feet up a sunlit Scots Pine trunk.

During early June, there were signs that a significant migration was underway; *Eupeodes corollae* was remarkably abundant together with substantial numbers of *Scaeva pyrastri*. This suspicion was confirmed by a report from Craig Hannah who works on an oil rig 140 miles off Aberdeen (Block 16/26 - 58°02'51.8"N 1°08'11.6"E). Craig posted a sequence of photographs of the rig plastered with hoverflies, most of which seemed to be *E. corollae*, on the night of 13-

14 June. Unfortunately, we don't know their origins but perhaps this can be deduced from prevailing winds and radar data. Karl Wotton at Exeter has been alerted and Craig is collecting samples for chemical analysis.

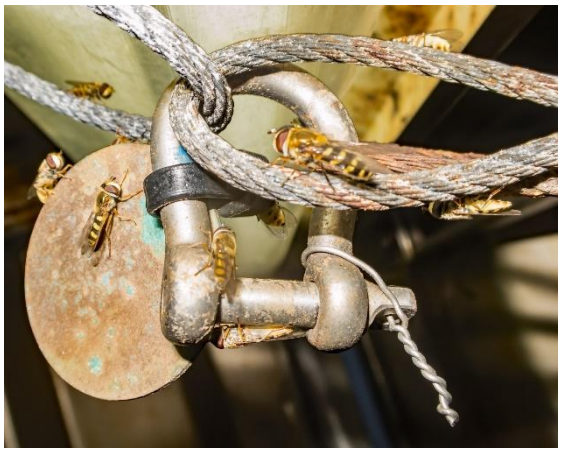

Figure 5 Hoverflies resting on Craig Hannah's oil rig off Aberdeen

Since Craig's observations we have received reports of large numbers of some migratory species in eastern and northern England and especially in NE Scotland, the Orkneys and Shetland. One report on the *Nature in Shetland* Facebook group was of hundreds of dead hoverflies on the strandline at Gulberwick beach on 28 June. The accompanying photograph showed a mixture of *Eupeodes corollae*, *Episyrphus balteatus*, *Scaeva pyrastri* and several *Syrphus*. Perhaps there is a project for readers based in coastal locations: regular beach walks logging the numbers (and species composition) of dead hoverflies on the strandline. In so-doing, perhaps it would be possible to develop a clearer picture of the frequency with which resident hoverfly numbers are boosted by migrants.

Furry Pine Hoverfly discoveries in the North Midlands

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2 Yorkshire Bridge Villas, Bamford, Hope Valley, S33 0AZ, robdfoster@yahoo.co.uk

Larva of Furry Pine Hoverfly found at Longshaw (photo Rob Foster)

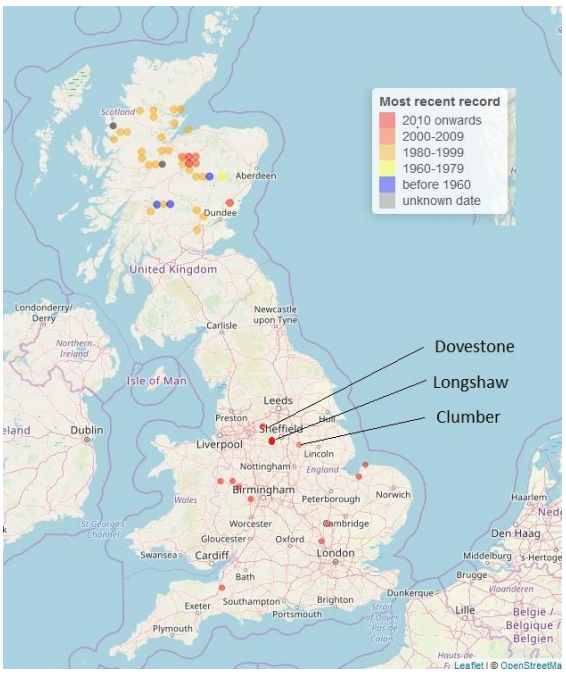
The Furry Pine Hoverfly, *Callicera rufa,* was until recently thought to be confined to remote pine forests in Scotland[1]. Amazingly though, it has been found to be present on the Longshaw Estate (National Trust) in the Derbyshire Peak District. This was achieved by an initiative involving creating what are called stump lagoons, which are made using a chain-saw to cut hollows in the tops of pine stumps[1,2]. They fill naturally with rainwater to simulate the rot-holes in which the hoverfly lays its eggs and raises its larvae. The hoverfly looks very much like a honey bee and spends most of its time in the tops of trees, passing completely unnoticed. So the best way to detect its presence is by looking for its larvae in the lagoons. These are very distinctive fat maggots since they have what look like heavy eyebrows, though these are actually groups of small horny hooks that help them cling onto the wood whilst they feed on bacteria in the water.

Using the stump lagoon technique, the hoverfly has been found, amazingly and totally unsuspectedly, to be present in a number of parts the UK. Alerted that it had been found by Ken Gartside at RSPB Dovestone in SW Yorks., some 20 miles away, NT Conservation Volunteers John Leach and Rob Foster readily persuaded Ranger Mark Bull, Longshaw's wildlife monitoring volunteer manager, to cut lagoons into about 20 pine stumps for them. That was only last spring (2019). It's amazing to have found the larva shown in the photo in a space of a few months. Even better, the larva immediately pupated and the hoverfly emerged at the end of August, just a few weeks later. It's not the first record in the DaNES area; the hoverfly was recorded in Nottinghamshire by John Szczur in Clumber Park in May 2009[3]. Nevertheless, the record is almost certainly the first for *Callicera rufa* in Derbyshire: one more rare hoverfly recorded on the Longshaw Estate: one of a growing list !

Furry Pine Hoverfly hatched from pupa of larva found at Longshaw (photo John Leach)

Mark Bull cutting pine stump lagoons (Photo Rob Foster)

Pine stump lagoon filled with pine off-cuts and sawdust, flooded with water (Photo Rob Foster)



Map of the distribution of finds of Callicera rufa. Note the increase in recent finds (marked in red), particularly in England, following the adoption of the Stump Lagoon technique
(Map provided by Roger Morris of the Hoverfly Recording Scheme)

It's Out There – Go Find It !!! John Leach (left) and Rob Foster (right) meet up with Ken Gartside (centre) at his presentation on Hoverflies given to the Saddleworth Naturalists covering his technique for finding *Callicera rufa* at Dovestone[2], which was used by them at Longshaw. (Photo John Leach)

References

[1]**Malloch Society.** Callicera rufa – A Scottish icon. http://www.mallochsociety.org.uk/callicera-artificial/

[2]**Gartside, K., 2017** The hoverfly Callicera rufa: The first Yorkshire record (including methodology for artificial rot-holes). The Naturalist, Issue Dec. 2017, **Vol. 142: No. 1096, pp 211-213**

[3]**David Budworth**, Derbyshire and Nottinghamshire Entomological Society. Personal communication

Brachypalpoides lentus pair

Carol and John Taylor saw this mating pair of *Brachypalpoides lentus* in Worcestershire in May.

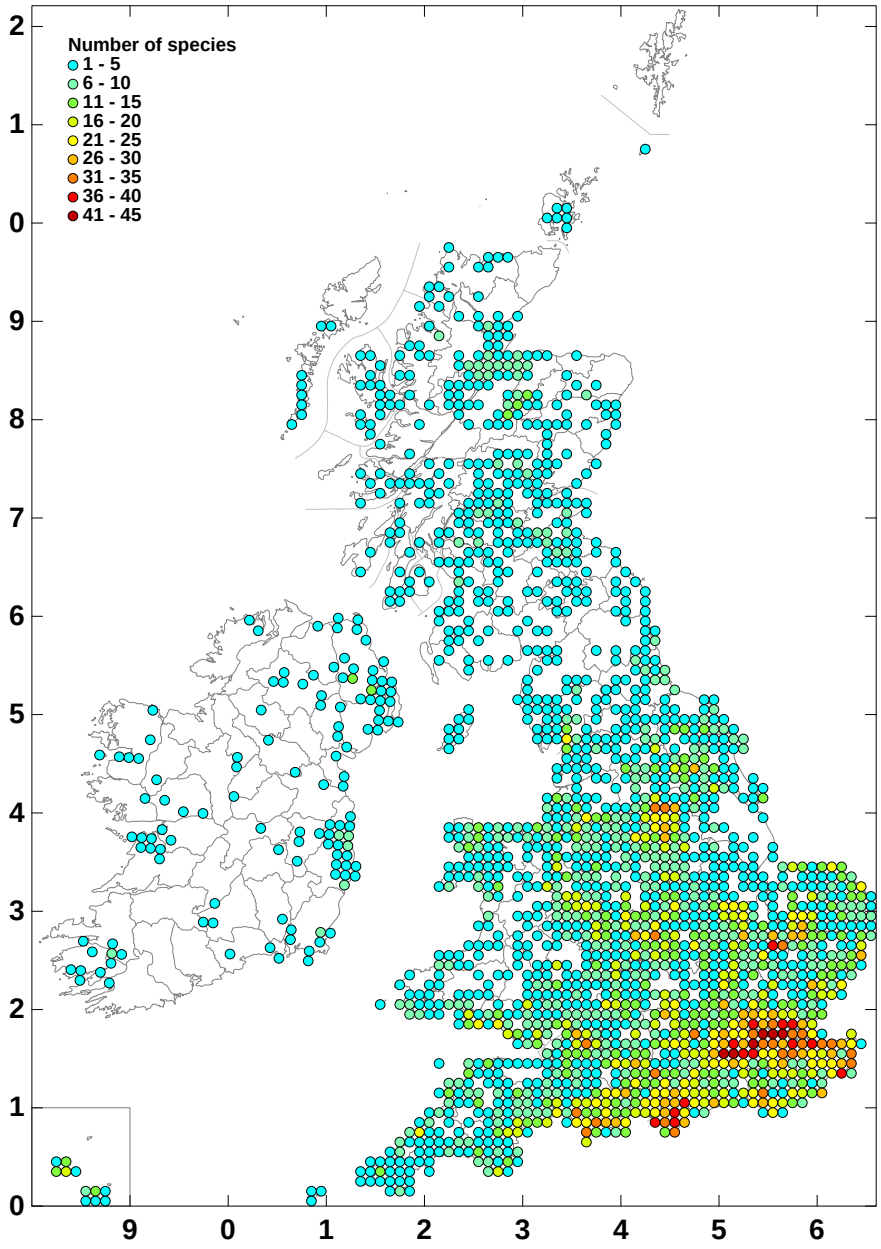
Pair of *Brachypalpoides lentus* at Trench Wood, Worcestershire SO9259 (photo: John Taylor)

TEPHRITID FLIES RECORDING SCHEME JUNE 2020

Since the last note (*Bulletin of the Dipterists Forum* **84:** pp. 8-10), based on data from England, Wales and Scotland, the British Tephritidae Recording Scheme database has continued to grow and a further summary is provided for records ascertained to the end of 2019.

COVERAGE

1878 hectads throughout the region.



DATA

For the majority of species the data are presented as the total number of hectads from all date classes (pre 1920 or date unknown, 1920-1939, 1940-1959, 1960-1979, 1980-1999 and 2000-2019) with the numbers in brackets showing 'new' hectads during the respective periods.

Dithryca guttularis (Meigen, 1826). 178, 21, 10 (10), 2 (2), 11 (10), 93 (85), 71 (50).
Myopites eximius Séguy, 1932. 45, 3, 3 (3), 2 (1), 1 (0), 22 (18), 36 (20).
Myopites inulaedyssentericae Blot, 1827. 126, 5, 4 (4), 3 (2), 2 (2), 60 (53), 97 (60).
Urophora cardui (Linnaeus, 1758). 485, 25, 17 (10), 15 (7), 26 (19), 254 (217), 382 (207).
Urophora cuspidata (Meigen, 1826). 40, 0, 2 (2), 2 (2), 3 (2), 19 (18), 22 (16).
Urophora jaceana (Hering, 1935). 698, 43, 22 (17), 14 (9), 50 (47), 362 (325), 397 (257).
Urophora quadrifasciata (Meigen, 1826). 294, 12, 15 (10), 13 (8), 5 (3), 115 (107), 219 (154).
Urophora solstitialis (Linnaeus, 1758). 89, 10, 5 (4), 3 (3), 4 (3), 45 (44), 30 (25).

Urophora spoliata (Haliday, 1838). 13, 1, 1 (1), 1 (0), 2 (2), 9 (7), 4 (2).
Urophora stylata (Fabricius, 1775). 534, 34, 25 (20), 24 (17), 44 (41), 304 (257), 328 (165).
Ensina sonchi (Linnaeus, 1767). 106, 38, 11 (7), 7 (5), 13 (10), 24 (18), 39 (28).
Noeeta pupillata (Fallén, 1814). 108, 21, 13 (12), 13 (4), 8 (6), 45 (39), 39 (26).
Acanthiophilus helianthi (Rossi, 1794). 130, 7, 3 (3), 5 (4), 2 (2), 27 (25), 102 (89).
Acinia corniculata (Zetterstedt, 1819). 56, 10, 0 (0), 3 (2), 0 (0), 7 (5), 41 (39).
Campiglossa absinthii (Fabricius, 1805). 129, 9, 7 (5), 13 (12), 6 (4), 75 (71), 41 (28).
Campiglossa argyrocephala (Loew, 1844). 27, 3, 1 (1), 1 (0), 1 (1), 19 (17), 5 (5).
Campiglossa loewiana (Hendel, 1927). 48, 5, 3 (2), 4 (4), 4 (4), 14 (14), 20 (19).
Campiglossa malaris (Séguy, 1934). 98, 0, 0 (0), 0 (0), 1 (1), 7 (6), 96 (91).
Campiglossa misella (Loew, 1869). 138, 9, 3 (1), 6 (2), 16 (14), 91 (76), 65 (36).
Campiglossa plantaginis (Haliday, 1833). 174, 16, 14 (9), 8 (5), 18 (17), 116 (88), 107 (39).
Campiglossa producta (Loew, 1844). 40, 8, 3 (3), 0 (0), 1 (1), 8 (8), 21 (20).
Campiglossa solidaginis (White, 1986). 18, 2, 2 (2), 4 (3), 1 (1), 9 (9), 1 (1).
Dioxyna bidentis (Robineau-Desvoidy, 1830). 193, 10, 4 (4), 8 (5), 8 (8), 72 (65), 127 (101).
Merzomyia westermanni (Meigen, 1826). 173, 10, 6 (6), 8 (4), 14 (13), 80 (66), 109 (74).
Oxyna flavipennis (Loew, 1844). 49, 10, 2 (2), 4 (3), 2 (2), 18 (16), 25 (16).
Oxyna nebulosa (Wiedemann, 1817). 34, 5, 4 (3), 1 (1), 1 (1), 15 (15), 11 (9).
Oxyna parietina (Linnaeus, 1758). 125, 14, 1 (0), 7 (3), 5 (4), 66 (60), 56 (44).
Sphenella marginata (Fallén, 1814). 387, 43, 18 (15), 16 (8), 15 (12), 112 (95), 299 (214).
Tephritis bardanae (Schrank, 1803). 449, 40, 22 (17), 29 (21), 37 (30), 225 (180), 250 (161).
Tephritis cometa (Loew, 1840). 180, 9, 2 (1), 4 (0), 14 (11), 88 (76), 127 (83).
Tephritis conura (Loew, 1844). 183, 14, 9 (8), 5 (2), 25 (22), 73 (62), 93 (75).
Tephritis divisa Rondani, 1871. 75, 0, 0 (0), 0 (0), 0 (0), 0 (0), 75 (75).
Tephritis formosa (Loew, 1844). 469, 9, 6 (5), 1 (1), 9 (9), 184 (173), 382 (272).
Tephritis hyoscyami (Linnaeus, 1758). 229, 17, 12 (8), 4 (4), 18 (15), 142 (120), 100 (65).
Tephritis leontodontis (De Geer, 1776). 147, 19, 11 (10), 4 (3), 3 (3), 47 (44), 77 (68).
Tephritis matricariae (Loew, 1844). 122, 0, 0 (0), 0 (0), 0 (0), 0 (0), 122 (122).
Tephritis neesii (Meigen, 1830). 493, 34, 29 (24), 20 (12), 22 (15), 164 (129), 375 (279).
Tephritis praecox (Loew, 1844). 29, 1, 0 (0), 0 (0), 0 (0), 0 (0), 28 (28).
Tephritis ruralis (Loew, 1844). 69, 9, 4 (4), 5 (3), 3 (2), 30 (27), 32 (24).
Tephritis vespertina (Loew, 1844). 612, 83, 41 (28), 39 (27), 57 (44), 287 (222), 374 (208).
Trupanea amoena (von Frauenfeld, 1857). 9, 2, 0 (0), 1 (1), 0 (0), 0 (0), 6 (6).
Trupanea stellata (Fuessly, 1775). 176, 22, 12 (9), 13 (9), 9 (8), 78 (68), 81 (60).
Chaetorellia jaceae (Robineau-Desvoidy, 1830). 216, 2, 3 (2), 4 (4), 7 (7), 87 (84), 161 (117).
Chaetorellia loricata (Rondani, 1870). 17, 2, 2 (1), 3 (1), 0 (0), 7 (7), 11 (6).
Chaetostomella cylindrica (Robineau-Desvoidy, 1830). 618, 61, 41 (33), 42 (24), 40 (36), 287 (249), 322 (215).
Orellia falcata (Scopoli, 1763). 111, 9, 8 (5), 12 (7), 5 (4), 38 (31), 62 (55).
Terellia ceratocera (Hendel, 1913). 44, 17, 5 (3), 11 (9), 8 (6), 8 (4), 5 (5).
Terellia plagiata (Dahlbom, 1850). 13, 5, 3 (2), 2 (0), 1 (1), 3 (2), 3 (3).
Terellia tussilaginis (Fabricius, 1775). 511, 36, 34 (28), 36 (23), 35 (29), 207 (167), 345 (228).
Terellia colon (Meigen, 1826). 133, 19, 15 (9), 12 (7), 6 (5), 70 (56), 65 (37).
Terellia longicauda (Meigen, 1838). 68, 5, 9 (8), 6 (2), 2 (2), 35 (30), 35 (21).
Terellia ruficauda (Fabricius, 1794). 491, 52, 29 (19), 35 (22), 22 (14), 284 (247), 276 (137).
Terellia serratulae (Linnaeus, 1758). 330, 22, 17 (14), 20 (11), 21 (18), 172 (148), 191 (117).
Terellia vectensis (Collin, 1937). 28, 1, 5 (5), 3 (2), 3 (3), 11 (7), 16 (10).
Terellia winthemi (Meigen, 1826). 39, 8, 6 (2), 3 (1), 1 (1), 14 (12), 19 (15).
Xyphosia miliaria (Schrank, 1781). 879, 56, 40 (32), 39 (29), 75 (62), 478 (398), 540 (302).
Euphranta toxoneura (Loew, 1846). 54, 7, 2 (1), 1 (1), 5 (5), 28 (26), 18 (14).
Goniglossum wiedemanni (Meigen, 1826). 67, 6, 2 (2), 4 (3), 4 (4), 29 (27), 29 (25).
Rhagoletis alternata (Fallén, 1814). 144, 14, 9 (7), 9 (7), 13 (13), 48 (46), 67 (57).
Acidia cognata (Wiedemann, 1817). 284, 35, 25 (23), 30 (18), 23 (22), 97 (89), 115 (97).
Anomoia purmunda (Harris, 1780). 470, 28, 11 (8), 11 (5), 29 (26), 187 (164), 362 (239).
Chetostoma curvinerve Rondani, 1856. 77, 1, 0 (0), 0 (0), 4 (4), 13 (13), 59 (59).
Cornutrypeta spinifrons (Schroeder, 1913). 8, 3, 0 (0), 2 (2), 1 (1), 1 (1), 1 (1).
Cryptaciura rotundiventris (Fallén, 1814). 28, 5, 1 (1), 1 (1), 2 (2), 10 (10), 9 (9).
Euleia heraclei (Linnaeus, 1758). 550, 42, 25 (19), 34 (25), 31 (26), 207 (179), 375 (259).
Philophylla caesio (Harris, 1780). 310, 20, 7 (5), 15 (11), 32 (26), 136 (127), 167 (121).
Platyparea discoidea (Fabricius, 1787). 26, 3, 7 (7), 3 (1), 3 (3), 14 (11), 1 (1).
Stemonocera cornuta (Scopoli, 1772). 15, 4, 2 (2), 0 (0), 2 (1), 4 (4), 4 (4).
Trypeta artemisiae (Fabricius, 1794). 119, 9, 2 (2), 3 (3), 4 (4), 38 (37), 69 (64).
Trypeta immaculata (Macquart, 1835). 71, 2, 1 (1), 0 (0), 6 (6), 19 (18), 46 (44).
Trypeta zoe Meigen, 1826. 240, 44, 27 (22), 19 (13), 20 (14), 83 (62), 106 (85).

EXCLUDED SPECIES

Campiglossa grandinata (Rondani, 1870). Still known only from old records at three sites in Sussex (Collin, J.E. 1937. *Trypeta vectensis* sp.n. and other new or little known British species of Trypetidae (Diptera). *Entomologist's Record and Journal of Variation* **49:** 1-7; Andrewes, C.H. 1955. *Campiglossa grandinata* Rond. and other Trypetidae (Dipt.) in Sussex. *Entomologist's Monthly Magazine* **91:** 42). The last known record was in September 1951.

Tephritis separata Rondani, 1871. Added to British list by James Edward Collin (Collin, J.E., 1943. *Tephritis separata*, Rdi., an additional British species allied to *T. conjuncta*, Lw. (Diptera, Trypetidae). *Entomologist's Record and Journal of Variation* **55:** 85-88) on the basis of two pairs taken at Barton Mills in September 1937 and 1938. The record by Harry Britten Jnr. (Britten, H., 1954. Records of some of the rarer Trypetidae. *Entomologist's Record and Journal of Variation* **66:** 156-157) from Old Coulsdon is most probably erroneous and a record from South Essex in 2010 by Peter Harvey requires confirmation. The wing pattern figured in much of the literature is unreliable as a means of separation from *Tephritis divisa* Rondani, 1871.

Terellia fuscicornis (Loew, 1844). Known only from Dunglass Estate, East Lothian (Whittington, A.E., 2002. *Terellia fuscicornis* (Loew, 1844) (Dipt., Tephritidae) new to Britain. *Entomologist's Monthly Magazine* **138:** 119-120).

Rhagoletis cerasi (Linnaeus, 1758). A record from Bristol in 1912 by H.J. Charbonier requires verification. An imported species.

Rhagoletis cingulata (Loew, 1862). Known only from a single female taken at Portland in 2016 (Bowyer, P. 2016. *Rhagoletis cingulata* (Loew) (Diptera, Tephritidae) in Britain. *Dipterists Digest* (*Second series*) **23:** 97-98). A specimen of *Rhagoletis* photographed, but not retained, by Jeff Higgott at Rushmere St. Andrew (TM24) on 28 July 2017 contained insufficient detail to distinguish it from *Rhagoletis indifferens* Curran, 1932.

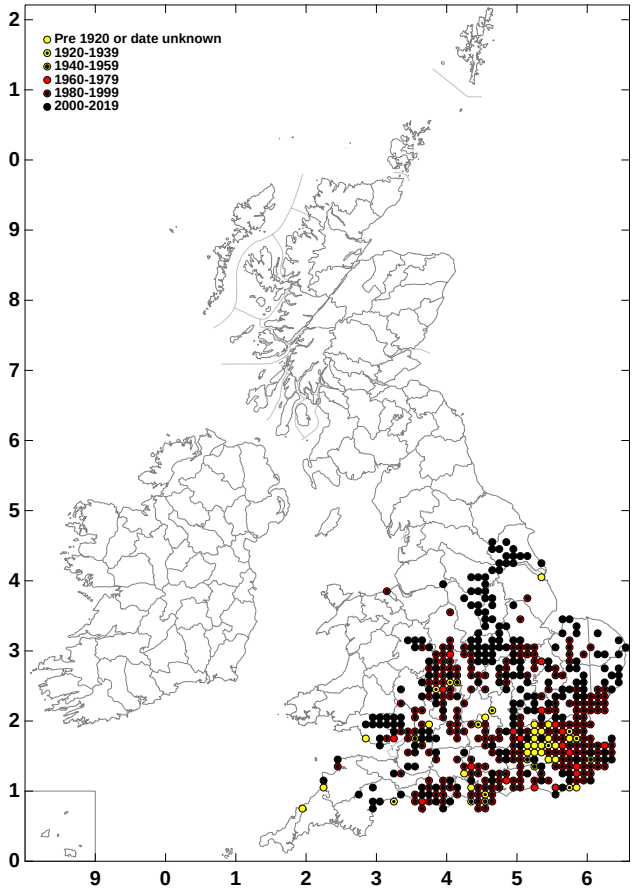
Bactrocera cucurbitae (Coquillett, 1899). Known only from a specimen collected on 20 June 1998 by A.A. Allen in his garden at 49 Montcalm Road, Charlton (Allen, A.A. 1999. *Bactrocera cucurbitae* Coquillett (Dip: Tephritidae): first known British capture at large. *Entomologist's Record and Journal of Variation* **111:** 36). An imported species.

Ceratitis capitata (Wiedemann, 1824). An occasional import in fruit and not known to be breeding freely in the British Isles.

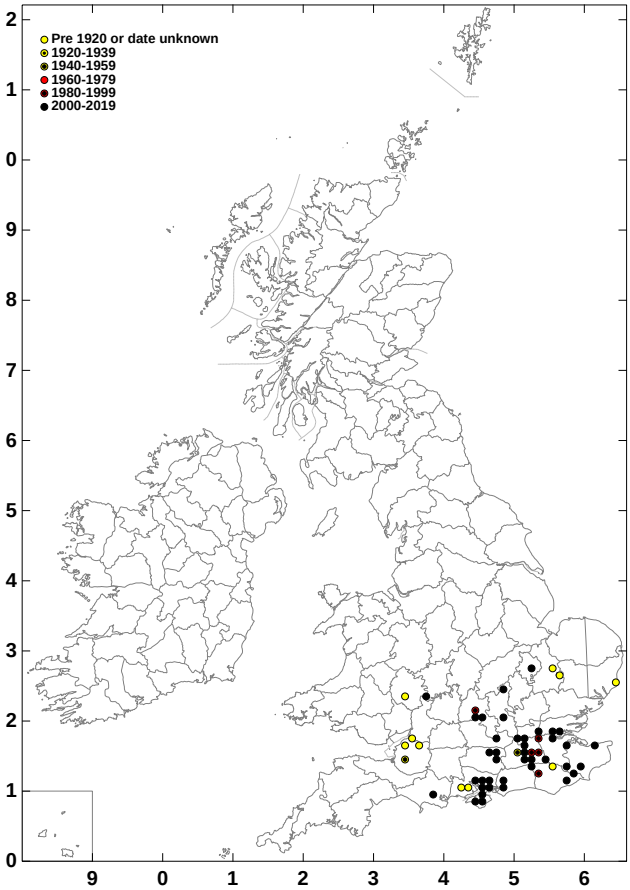
Plioreocepta poeciloptera (Schrank, 1776). Known from outbreaks in gardens in Hertford in 1936 (Andrews, H.W. 1937. The Asparagus Fly (*Platyparea poeciloptera*, Schr.) in England. *Entomologist's Record and Journal of Variation* **49:** 34; Buckhurst, A.S. 1937. The Asparagus Fly, *Platyparea poeciloptera* Schr. (Dipt., Trypetidae) in England. *Entomologist's Monthly Magazine* **73:** 187-190). A purported record from Hampshire in 2011 has yet to be confirmed.

DISTRIBUTION MAPS OF SELECTED SPECIES

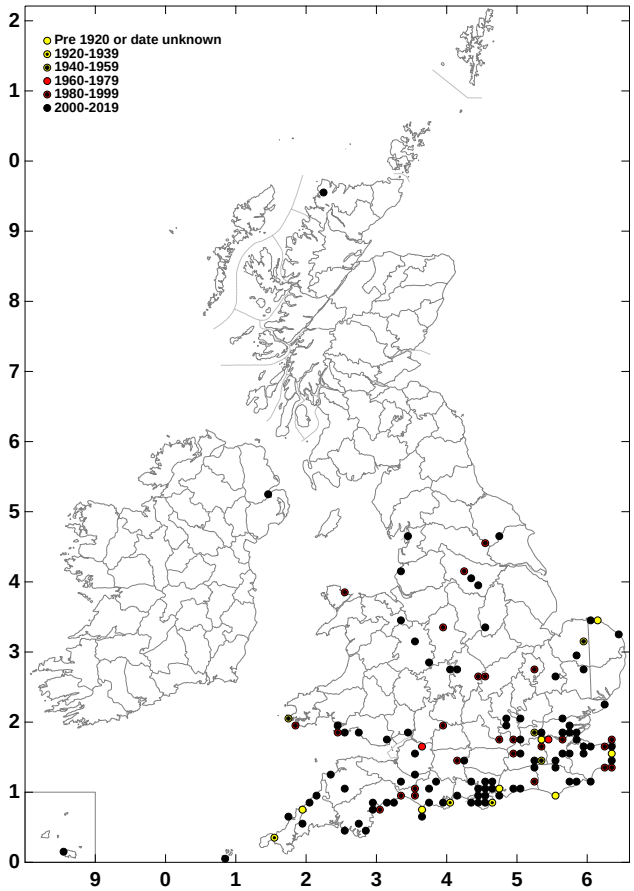
The following maps are colour coded according the first hectad per date class and highlight those species which seem to have extended their range during the past twenty years.



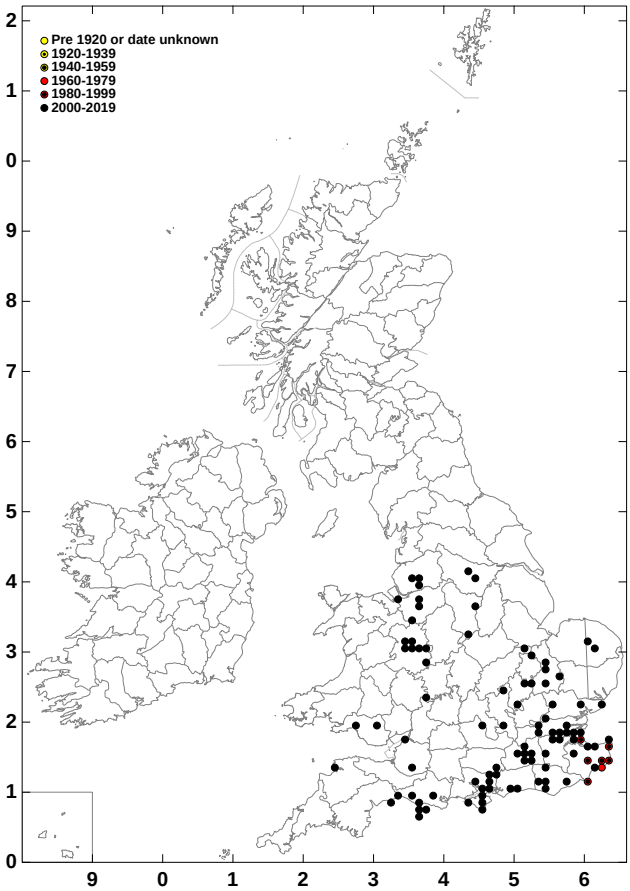
Urophora cardui (Linnaeus, 1758)



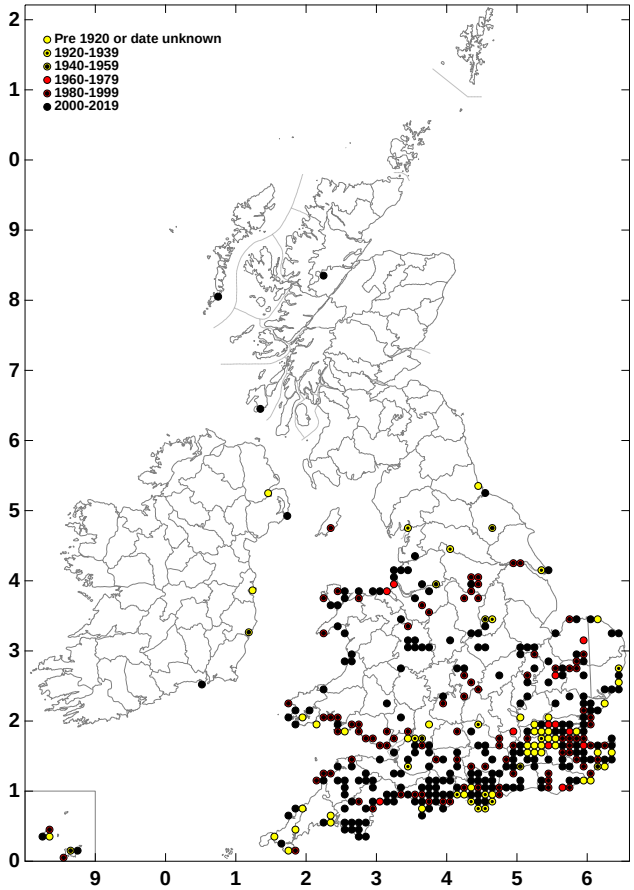
Acinia corniculata (Zetterstedt, 1819)



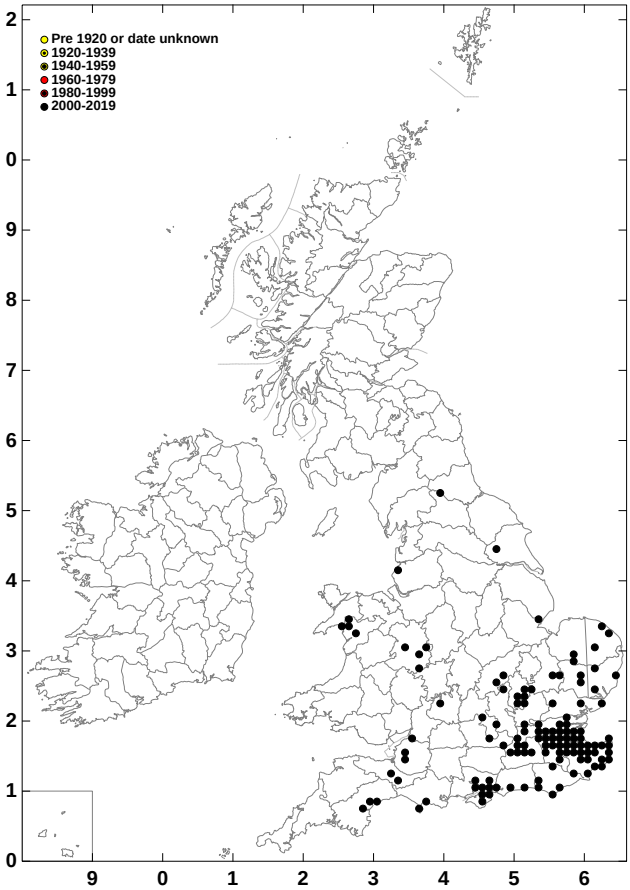
Acanthiophilus helianthi (Rossi, 1794)



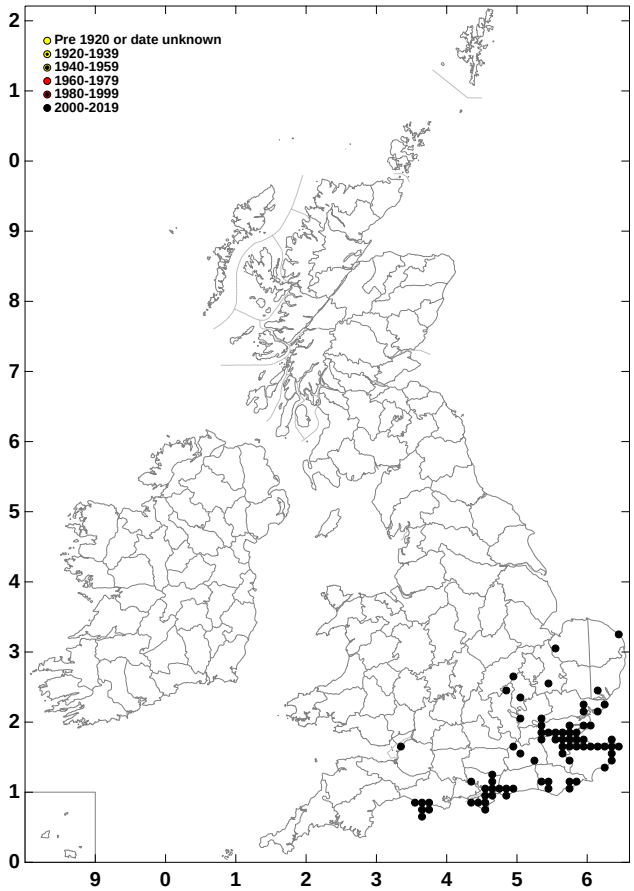
Campiglossa malaris (Séguy, 1934)



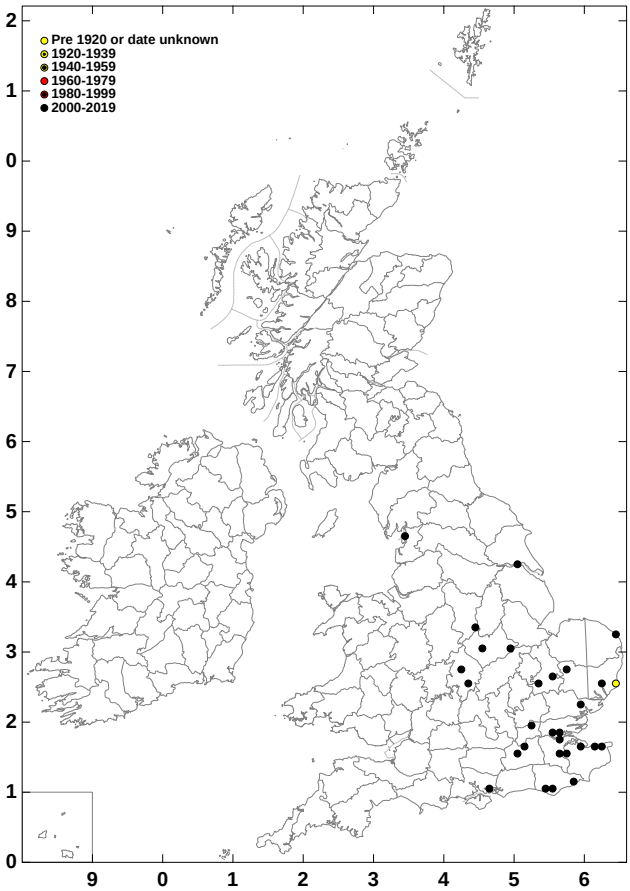
Sphenella marginata (Fallén, 1814)



Tephritis matricariae (Loew, 1844)



Tephritis divisa Rondani, 1871



Tephritis praecox (Loew, 1844)

NOTES

Myopites inulaedyssentericae Blot, 1827. Controversy exists as to whether the species which forms capitulum galls in *Pulicaria dysenterica* (L.) Bernh. (Magnoliidae, Asteraceae) is *Myopites inulaedyssentericae* Blot, 1827 or *Myopites apicatus* (Freidberg, 1980).

Urophora cardui (Linnaeus, 1758). In 1986 Graham Rotheray (Rotheray, G.E. 1986. Effect of moisture on emergence of *Urophora cardui* (L.) (Diptera: Tephritidae) from its gall on *Cirsium arvense* (L.). *Entomologist's* Gazette **37:** 41-37) provided empirical evidence that adults can only emerge from the galls after they have been softened by Winter wet. It is intesting to note that while the fly may be abundant in the relatively drier parts of the south east it has not been recorded from many parts of the wetter west.

Acanthiophilus helianthi (Rossi, 1794). First recorded from Ireland at Belfast Airport on 11 July 2019 by Aideen O'Doherty and from Scotland at Old Shoremore on 30 July 2019 by Ian Andrews.

Tephritis praecox (Loew, 1844). This was added to the British list by James Edward Collin (Collin, J.E. 1937. *Trypeta vectensis* sp.n. and other new or little known British species of Trypetidae (Diptera). *Entomologist's Record and Journal of Variation* **49:** 1-7) on the basis of a female taken at Aldeburgh, Suffolk on September 19th 1907. No further British records were known until a male was found in a private garden at 11 Station Road, Newhaven , East Sussex on 22 July 2002 by Alfred Jones with further specimens between 20 September 2002 and 15 June 2004 (Jones, R.A. 2004. *Tephritis praecox* (Loew) (Diptera, Tephritidae) established in Britain. *Dipterists Digest* (*Second series*) **11:** 16). Most recent records have also been from private gardens containing *Calendula officionalis* L. (Magnoliidae, Asteraceae).

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County Recorders

Dipterists Forum

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

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

Ireland
- CEDAR (Ulster Museum)

North West England
- Cumbria Biodiversity Data Centre
- Greater Manchester LRC
- Lancashire Envi. Record Network
- Merseyside BioBank
- rECOrd (Cheshire)
- Isle of Man

Wales
- North Wales (Cofnod)
- Powys & Brecon Beacons
- South-East Wales
- West Wales BIC

West Midlands
- Staffordshire Ecological Record
- EcoRecord (Birmingham & Black Country)
- Herefordshire BRC
- Warwickshire BRC
- Worcestershire BRC
- Shropshire EDN

South West England
- Bristol ERC (BRERC)
- Cornwall & Isles of Scilly - ERCCIS
- Devon BRC
- Dorset ERC
- Gloucestershire Centre for ER
- Somerset ERC
- Wiltshire & Swindon (WSBRC)

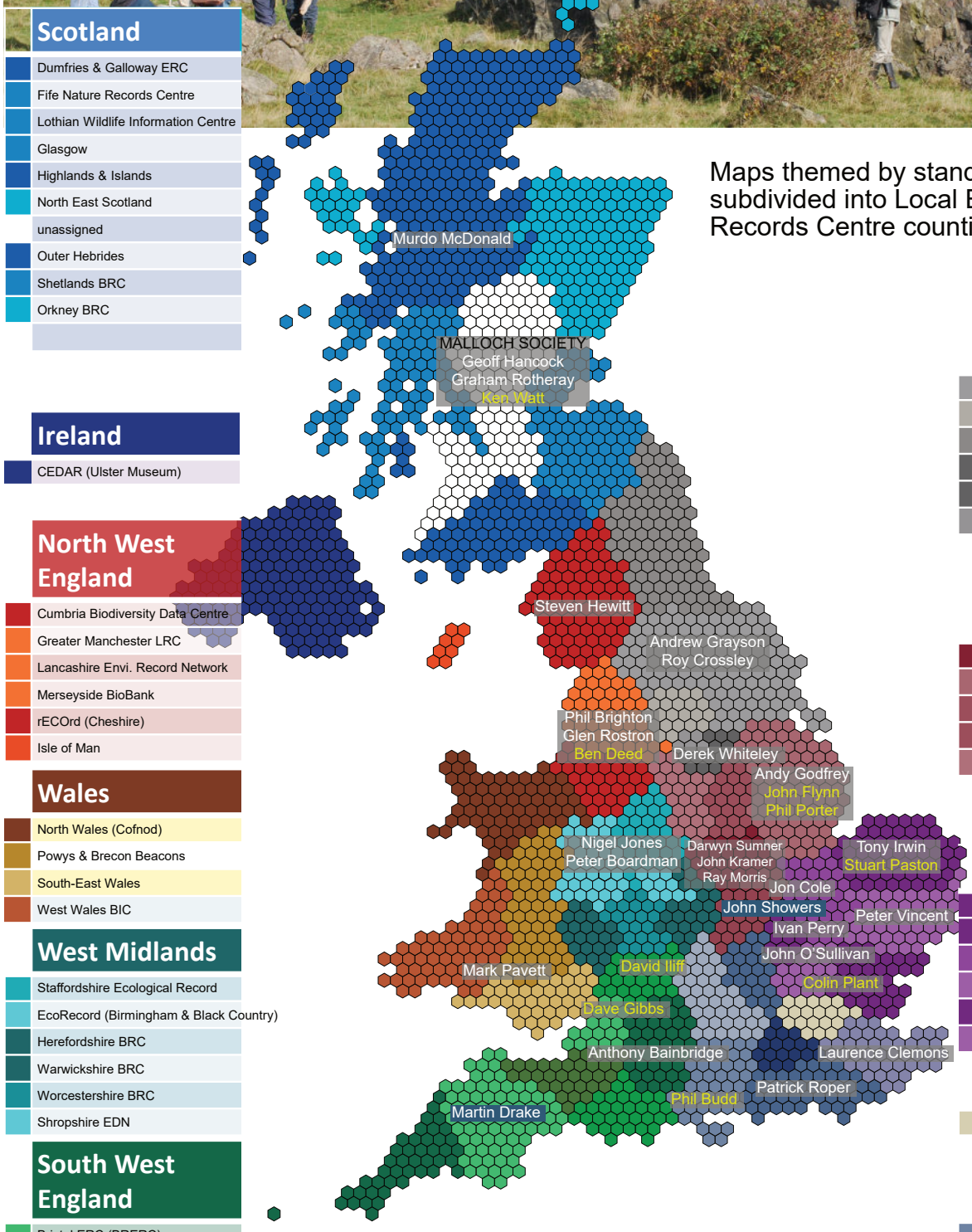
North East England
- North & East Yorkshire EDC
- West Yorkshire
- North East
- Rotherham, Doncaster
- Sheffield
- Barnsley

East Midlands
- Leicestershire & Rutland ERC
- Lincolnshire ERC
- Northamptonshire BRC
- Nottinghamshire
- Derbyshire (closed)

East of England
- Norfolk Biodiversity Info. Service
- Bedfordshire and Luton
- Cambridgeshire & Peterborough
- Hertfordshire ERC
- Essex (closed)
- Suffolk

Greater London
- Greenspace Information for G. L.

South East England
- Hampshire BIC (HBIC)
- Thames Valley ERC
- Kent & Medway BRC (KMBRC)
- Surrey BIC (SBIC)
- Sussex BRC (SBRC)
- Buckinghamshire & Milton Keynes
- Isle of Wight



The dipterists indicated have a good local knowledge and work closely with their LERC. Blue background = organised Regional Groups. Yellow text = hoverflies only

ALERC
Association of Local Environmental Records Centres

A joint ALERC & Dipterists Forum project by Darwyn Sumner

Dipterists Forum Recording Schemes and Study Groups

Craneflies
Cranefly Recording Scheme
Tipuloidea & Ptychopteridae

Pete Boardman
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Newsletter: John Kramer
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Chironomids

Patrick Roper
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Dixidae & Thaumaleidae

Julian Small
julian.small@naturalengland.org.uk

Fungus gnats
Mycetophilidae & allies

Peter Chandler
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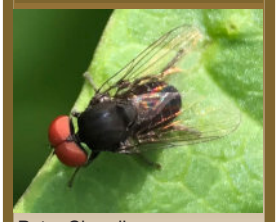
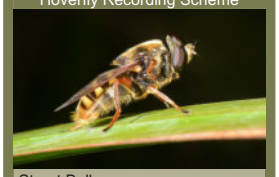
Flat-footed flies
Platypezidae



Peter Chandler
chandgnats@aol.com

Hoverflies
Hoverfly Recording Scheme



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Roger Morris
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Newsletter editor: David Iliff
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Soldierflies
Soldierflies & allies & Recording Scheme

Martin Harvey
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Empid & Dolichopodid
Recording Scheme

Martin Drake martindrake2@gmail.com
Steven Hewitt smhewitt@hotmail.co.uk
Nigel Jones nipajones@talktalk.net
Martin=Dolis, Nigel=Empids, Steven=Hybotids

Culicidae
Mosquitoes Recording Scheme

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Pipunculidae
Study Group

David Gibbs
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Chloropids
Chloropidae Study Group

John & Barbara Ismay
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Heleomyzid
Recording Scheme

Ian Andrews
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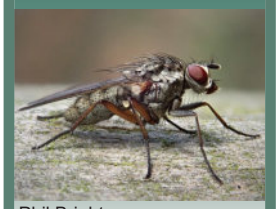
Dipterists Forum

Anthomyiids
Anthomyiidae Recording Scheme



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Agromyzidae
Leaf-miner Recording Scheme

Barry Warrington
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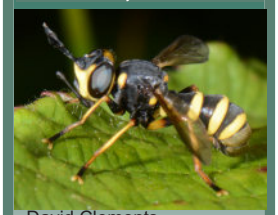
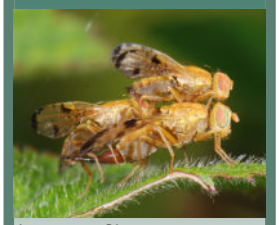
Conopids
with Lonchopteridae, Ulidiidae, Pallopteridae & Platystomatidae



David Clements
dave.clements1@ntlworld.com

Tephritids
Tephritid flies Recording Scheme



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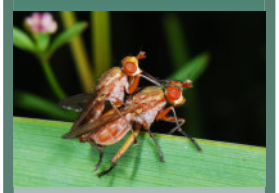
Sciomyzids
Snail-killing flies Recording Scheme



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Darwyn Sumner
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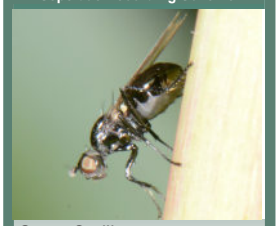
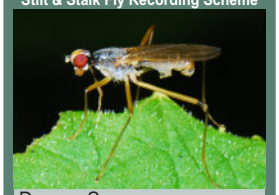
Sepsids
Sepsidae Recording Scheme



Steve Crellin
steve_crellin1@hotmail.co.uk

Micropezids Tanypezids
Stilt & Stalk Fly Recording Scheme



Darwyn Sumner
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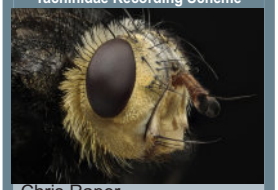
Tachinids
Tachinidae Recording Scheme



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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

Download this guide as a pdf from
http://micropezids.myspecies.info/node/301

Scathophagids
Scathophagid Recording Scheme

Stuart Ball
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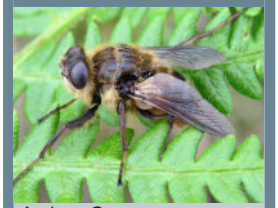
Oestrids
Oestridae Recording Scheme



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Calliphorids
Calliphoridae Recording Scheme

Olga Retka
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Sarcophagids
Flesh Fly Recording Scheme

Daniel Whitmore daniel.whitmore@smns-bw.de
Charles Griffiths CharlesEGriffiths1@outlook.com
Nigel Jones nipajones@talktalk.net

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

Interactive pdf. Click on the panels to access internet sites. Upper half = website, lower half = Atlas datasets

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

Design: Darwyn Sumner