BULLETIN OF THE Dipterists Forum

Bulletin No. 92

Autumn 2021

Affiliated to the British Entomological and Natural History Society

Bulletin No. 92

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ISSN 1358-5029

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Please use the Booking Form downloadable from our website

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Now organised by several different contributors, contact the Secretary.

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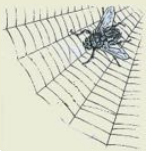


Photographs: Front cover *Ilione albiseta*, **Darwyn Sumner**, above *Heteromyza rotundicornis*, **Ian Andrews**

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

RECORDING SCHEME BROCHURE

Download the back pages for a brochure

Copies of this Bulletin are mailed to Dipterists Forum members. A PDF version is available on our website (members only.)

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, Jane Hewitt; Mail costs, Biological Records Centre

Editorial

Open Data doubled

Open data is a term you'll come across a good deal in this Bulletin. Publicly accessible species occurrence records that you'll readily find on NBN Atlas.

Dipterist Forum has a data partner page on their site at https://registry.nbnatlas.org/public/show/dp172 where you'll currently find 16 datasets listed. Half of them are Recording Schemes and the other half are compilations from our Field Weeks.

There's been a lot of activity there this year and we've doubled the number of records you would have seen six months ago.

63,182

Dipterists Forum Open Data records on our NBN Atlas page

This is all your work of course. Records sent to our Recording Schemes and through other systems are now playing their part in conservation & research and are available for you to play around with.

No fly zone

May was an extraordinary month. The first half was unseasonally cold and frosty and the second very wet. I spent the last week in Norfolk and only experienced one dry day. What happened to all the flies in these conditions? With the exception of a few St Mark's Flies and one damp *Bombylius major* I saw precious little even on my favourite hunting grounds. No flies at all on the boardwalk at Southrepps Common and at Beeston Regis Common, normally buzzing with stuff, just a single *Eristalis*.

Some of our hoverflies for example have a very short spring season, they emerge, do their stuff and then aren't seen again. What happens to them when the frosts delay their emergence and they immediately get massacred by rain? David Iliff tells me that they've been "fairly sparse" and his county records amount to a mere 20 species "all in frustratingly small numbers" (more on this topic in his newsletter.)

For us iNaturalist fans it was possible to watch as the clement weather gradually crept north through Europe. Micropezid records began in Italy, southern France, Spain and Switzerland in mid May and gradually began to drift north, our UK records (Sam Rees reports a mass emergence of *Calobata petronella*) not until after they'd begun to be found in Netherlands, Germany, Poland and Moscow. From the latter, Vikula Bludov speaks of a mass emergence of *Micropeza corrigiolata* as occurring in an "enchanted clearing of elves". If the Russian language is all as poetic as that maybe I'll write the next Bulletin in it.

Picture this

In this issue we emphasise a different source of fly picture galleries than those detailed in Bulletin 91. Steve Falk tells me that that issue was jam-packed and in response we jam-pack this one with his material. Steve has made great strides in amassing photographs of Diptera, some groups more comprehensively than others. We feature his Sciomyzidae gallery thoroughly in the attached newsletter whilst his Flickr collections of Ulidiidae, Pallopteridae and Platystomatidae are of particular interest because members now have access to Dave Clements' latest key to picture-wings which he distributed at his Preston Montford workshop in 2019.

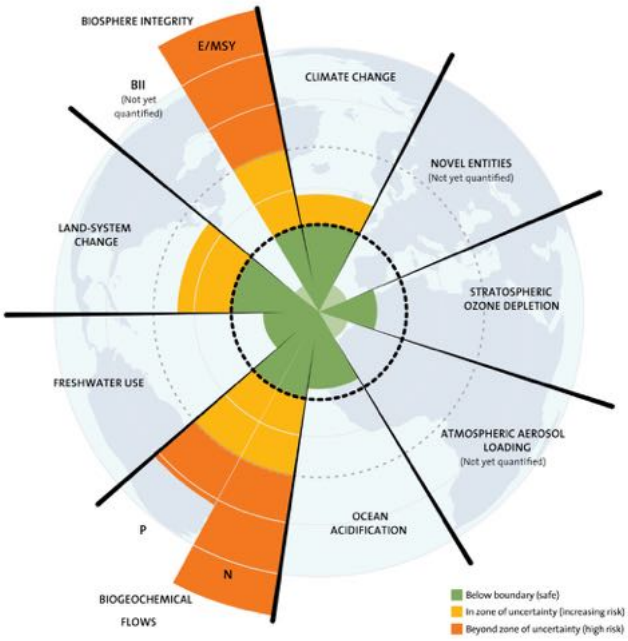
Feedback

It's encouraging to read all the kind messages about the Bulletin. A lot of it is down to a number of contributors and we welcome stories from across the membership. We can't always squeeze everything in but we get there eventually. This issue features an item from Martin Drake that we saved up as we'd already tempted you to spend a lot of money on other stuff in the last Bulletin.

Fly away

If you like to organise and pigeonhole stuff, if you're a sucker for coloured ringbinder tabs, habitat classifications or taxonomy then when it comes to the fate of the planet, the Rockström diagram is an excellent organiser. We featured it in Bulletin 89 and it was used as the core of the recent film "*Breaking Boundaries: The Science of our Planet*" (Netflix) by Johan Rockström and David Attenborough.

All the 9 segments of the diagram concern us but the segment which we naturalists are continually focussed upon and contribute important open data to is the biosphere integrity segment in which things like biodiversity loss and conservation play a significant part.



The green zone is, according to the film, the habitable zone which we occupied during the Holocene - pre industrial revolution.

The Biosphere Integrity segment is split into two parts, the coloured bit is overall loss of genetic diversity (including biotopes) and the unquantified part (functional biodiversity) contains lots of our research (e.g. Steve Falk's pollinator article, our Open Data) but has no quantifiable index as yet (or ever if it's all gone before we can figure it out.) For a detailed breakdown of that segment you'll need to look for Aichi targets, WWF & State of Nature reports and the like.

It seems that others may have been thinking along the same sort of lines as our letter to *New Scientist* detailed in the last Bulletin. Shortly after their editorial conference there was a marked change in emphasis in *NS* on environmental topics. Biodiversity loss has featured in a few articles and several of their recent ones can be marked onto the Rockström diagram, from Nitrogen flows (27th May) to the many by their writer Graham Lawton.

All the above are complemented by Dave Goulson's new book "*Silent Earth*" (see Reviews)

Star performance by Erica McAlister on *BBC Radio 4*'s last "Nature Table" of the series. In praise of *Episyrphus balteatus*, especially their migrating swarms, not only doing 20% of the pollination but larvae chewing their way through countless tons of aphids. And what's that about Asilidae venom? Tell us more.

"If you give me six lines written by the hand of the most honest of men, I will find something in them which will hang him." ~ Cardinal Richelieu

Survey: State of Nature

I was sent a request to complete a Google survey by Wildlife and Countryside Link. A rather odd set of questions for a Recording Scheme with many questions expecting you to know about local planning and other data use more allied to Local Environmental Resources Centres. It is intended to inform a briefing to Government on environmental provision and usage. I had a shot but don't expect many outcomes that are relevant to issues that concern us, maybe a little support for recording and reporting systems. I recollect NFBR debating their joining WCL several years ago, think of them perhaps as "influencers" as they've several powerful organisations backing them up.

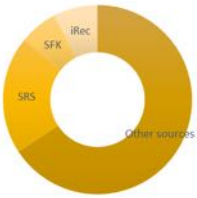
iRecord + iNaturalistUK

An announcement on the iRecord site at https://tinyurl.com/hy6t5pxz tells of the cooperation between these two systems.

There's now a dedicated iNaturalistUK website at https://uk.inaturalist.org/ your starting point for getting involved. Our Victoria Burton is one of a handful of people doing the advocating on this site with her brief story.

Sciomyzidae dataset increases

Without continual monitoring over many years there is little chance of extracting meaningful trend data out of our Diptera records. Some come very close, read about those in the Hoverfly newsletters. There has been a fairly continuous interest in the Sciomyzidae over the years and most dipterists record them so there's perhaps a chance to detect some trends.



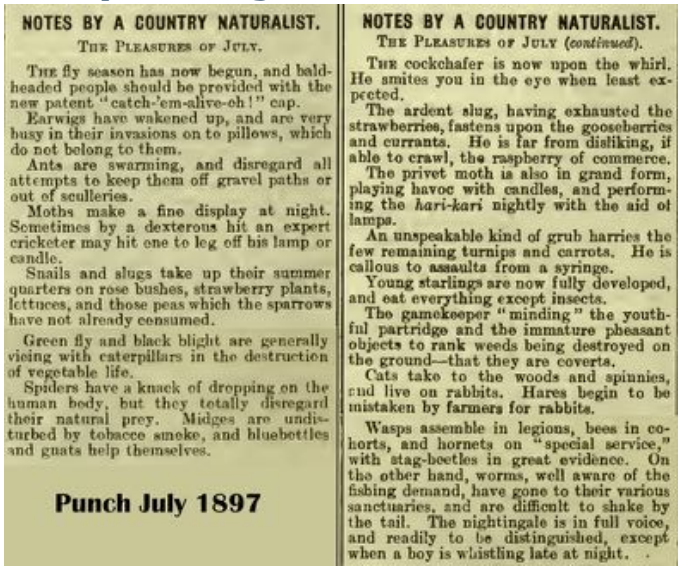
The NBN Atlas now hosts 36,926 Sciomyzidae records; over a third of them being added in the past year from the Recording Scheme, iRecord and our digitisation of Steve Falk's records.

All Open Data now, so available for any researcher to download and study.

Etymology & Entomology

UK Government is investing £4M to teach Latin in schools. How much did they get to teach Natural History? Follow at https://teach.ocr.org.uk/naturalhistory

124 years ago



NOTES BY A COUNTRY NATURALIST.

THE PLEASURES OF JULY.

THE fly season has now begun, and bald-headed people should be provided with the new patent "catch-'em-alive-oh!" cap.

Earwigs have wakened up, and are very busy in their invasions on to pillows, which do not belong to them.

Ants are swarming, and disregard all attempts to keep them off gravel paths or out of sculleries.

Moths make a fine display at night. Sometimes by a dexterous hit an expert cricketer may hit one to leg off his lamp or candle.

Snails and slugs take up their summer quarters on rose bushes, strawberry plants, lettuces, and those peas which the sparrows have not already consumed.

Green fly and black blight are generally vieing with caterpillars in the destruction of vegetable life.

Spiders have a knack of dropping on the human body, but they totally disregard their natural prey. Midges are undisturbed by tobacco smoke, and bluebottles and gnats help themselves.

Punch July 1897

NOTES BY A COUNTRY NATURALIST.

THE PLEASURES OF JULY (*continued*).

THE cockchafer is now upon the whirl. He smites you in the eye when least expected.

The ardent slug, having exhausted the strawberries, fastens upon the gooseberries and currants. He is far from disliking, if able to crawl, the raspberry of commerce.

The privet moth is also in grand form, playing havoc with candles, and performing the *hari-kari* nightly with the aid of lamps.

An unspeakable kind of grub harries the few remaining turnips and carrots. He is callous to assaults from a syringe.

Young starlings are now fully developed, and eat everything except insects.

The gamekeeper "minding" the youthful partridge and the immature pheasant objects to rank weeds being destroyed on the ground—that they are coverts.

Cats take to the woods and spinnies, and live on rabbits. Hares begin to be mistaken by farmers for rabbits.

Wasps assemble in legions, bees in cohorts, and hornets on "special service," with stag-beetles in great evidence. On the other hand, worms, well aware of the fishing demand, have gone to their various sanctuaries, and are difficult to shake by the tail. The nightingale is in full voice, and readily to be distinguished, except when a boy is whistling late at night.

50 years ago

Dipterists Forum held their first field meeting in the Forest of Dean in 1973 (see Alan Stubbs' account in Bulletin 47) - that's 11 people in Gloucestershire Herefordshire & Gwent. We've missed only one summer field meeting since then (last year) so we are headed towards our 50th meeting.

Our 2022 field meeting (49th) is well in hand but it's not too soon to be thinking about how we might celebrate our 50th.

Upload your photos

Flickr features strongly in this issue of the Bulletin with Steve Falk's detailed run-through of his site.

The whole Flickr experience is something that can be quite rewarding if you set one up for yourself. You can upload quite a number of images before having to pay. Once you've got your own site set up you can also begin a list of those you follow and get notified when they add new images. Steve would obviously be the first on this list but Nigel Jones, Ian Andrews and perhaps me are worth adding to that list. You'll also find entomologists from abroad who add fascinating pictures, look for Simon Oliver in Spain, Nikola Rahme in Hungary and Rui Andrade in Portugal.

We don't have a comprehensive list of dipterists who post images on Flickr yet, you'll have to hunt them down yourself. Or tell me and perhaps we can put together a list for the next Bulletin.

AGRICULTURAL ELEVATION.

Farmer. "WELL, NO, THEY MAYN'T BE EXACTLY OBJECTS O' BEAUTY, AS YOU SAYS, SIR; BUT THEY DO 'ELP THE 'ARVEST WONDERFUL!"

Darwyn Sumner

Chairman's roundup

I hope that you have been able to enjoy this year's field season, following the relaxation of Covid restrictions on movement and social mixing. It has been a relief for many to be able to get back to their studies and recording, or to the simple enjoyment of flies and other insects, and a particular delight to be able to meet and chat with fellow entomologists. If you or your family have been or remain badly affected by the disease, our thoughts are with you.

Our summer field meeting, based at Penryn in West Cornwall, postponed last year, was thankfully able to go ahead – what a relief after all the planning! Indeed, it was a great success, much enjoyed by all 29 residents and those who joined us on day visits. We were on the edge of (but right side of) Covid restrictions and guidance – our thanks must go to our university hosts for the adjustments they made. My particular gratitude to Jane Hewitt for all the organising – and there was a lot of it – and to Phil Brighton who, even though he was unable to join us, handled all the finance superbly. One thing is for certain, 2021 will be marked by a great upsurge in Cornish Diptera records. The annotated maps showing all the sites we had permission to visit for recording purposes will be deposited in the library at Dinton Pastures to help with the planning of future events in Cornwall.

Pandemic uncertainties remain, however. Zoe Adams was hoping to be able to arrange Dipterists Day 2021 in Cambridge, but our hoped-for hosts were understandably unable to commit to making a meeting room available where large numbers of us would be likely to congregate in close proximity, so we have opted to hold the day on-line again. This was a decision made easier by the success of the meeting last November, attended by a large audience, many of whom would not have been able to attend a physical meeting. We know though, that virtual meetings cannot substitute for the all the chat, networking, catching-up with friends and so forth that occurs when people can actually get together, so rest assured we shall do our best to resume physical meetings in the future. Hopefully, it will then be possible to stream presentations live, so we will be able to cater for those who cannot be present in person as well as those who can.

Yesterday I learnt that Alan Stubbs's long-awaited book on craneflies has just been published, and I am looking forward enormously to obtaining a copy. What a boost to cranefly recording and study it will be! Our thanks must go to all those who have been involved in testing and refining Alan's keys, to the editors and to BENHS. I am delighted to hear that Peter Boardman and John Kramer have agreed to run our spring 2022 workshop on craneflies. We must also warmly thank the Field Studies Council for continuing to offer a substantial discount to DF members attending these workshops at Preston Montford. Also, remember that DF members are eligible for a substantial discount if purchasing the cranefly book from BENHS.

Not only did Judy Webb last year make it onto The Woman's Hour Power List 2020: Our Planet but this spring she was awarded the British Empire Medal in the Queen's Honours List. Congratulations, Judy!

Returning briefly to the subject of records and the importance of these being easily accessible for conservation and scientific purposes, Darwyn has been leading two important projects. The first concerns summer field meeting data sets – although those from all recent meetings have made their way onto iRecord or NBN, the records from some previous meetings have yet to be collated, or, if they have been collated, to be uploaded. Darwyn, with the help of Martin Harvey, is doing his best to put this to rights. The second project concerns the digitisation of Steve Falk's many valuable records, a process which Darwyn, with the help of recording scheme organisers, has taken over from the Biological Records Centre. You will find more information on both these projects later in this Bulletin. Thank you Darwyn.

That leads me on to recording schemes and study groups. It was with great sadness that I and many others learnt of the death of Michael Ackland who did so much to further the study and recording of anthomyiids among other Diptera. Appreciations of Michael and his work appear elsewhere in this Bulletin – suffice it to say that I was one of many who found him extremely helpful and courteous. I already miss his expertise when I come across a puzzling anthomyiid but am grateful that he has left us a legacy of a fine set of keys among many other publications.

Better news is that yet another family is to be covered by a recording scheme or study group, and that is the lesser dung flies. Committee has welcomed the establishment of a Sphaeroceridae study group and wishes Dave Brice, Andrew Cunningham, Paul Gatt and Mark Welch good progress!

Finally, I shall be stepping down as chair after 5 years in post at the end of this year and am delighted that Erica McAlister has agreed to stand for election to the position. More on this in the next Chairman's roundup which will be my last before I hand over to Erica. This change excepting, all other officers are willing to remain in post: this from my point of view is really pleasing since we make a great team. Stuart Ball is standing down after many years on committee (again more on this next time), while John Mousley is standing for election – I am sure he will bring a lot of energy and ideas with him.

Rob Wolton, July 2021

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.

Fly-ing slow

"What is this life if full of care we have no time to stand and stare ..."

In the frenzy to accumulate records for sites and map distributions, both valuable and enjoyable activities, it often seems that little time is spent making studied field observations. There is also the tension between watching behaviour and the need to take the observed specimen for identification (when not obvious in the field). How long do I wait?

Over the past six years of being a DF member, my impression is that the overwhelming number of papers in the excellent Dipterists Digest relate to recording activity and primarily refer to adults. This is not a criticism of the journal, rather an inference drawn about the activity of dipterists.

Some of the most engaging papers I've read in the Digest relate to immature stages and to adult behaviour. Graham Rotheray's numerous papers on larval development and feeding modes are a real eye-opener and have motivated me to engage more with immatures. I have recently taken up rearing out mosquitoes, dixids, chaoborids, miltogrammines and sphaerocerids from immatures (easy to do with patience), with the aim of not only identifying the pristine adults that emerge (good for female mosquitoes), but to examine larval and pupal cases and to observe larval feeding behaviour. If you haven't observed larval dixids feeding and shuffling around under a stereomicroscope, then I recommend it!

A paper in Dipterists Digest on "Novel courtship in *Choerades marginatus*: the female robberfly as coquette" (DD, Vol 20: 31-39) is a good example of patient field observation of interesting behaviour that may be of wider significance. Such studies resonate with the grand Victorian tradition of observational natural history that we have, it seems to me, largely lost.

My most enjoyable days out fly-ing have been when I have taken a couple of hours "off" to observe behaviour. I recall spending an hour at Grimston Warren (West Norfolk) observing a female *Ammophila sabulosa* attending to her nest, removing the little stones from the entrance, loading the paralyzed caterpillar and then resealing the entrance against (clepto)parasites. She was very particular about the stones she used to block the nest (trying fits, tossing some stones aside), finally scattering fine sand and small twigs over the entrance. As she was sealing her nest she faced-off a *Metopia*, the wasp and fly standing motionless for eleven minutes, after which the fly departed and the wasp finished her task. My field studies of cleptoparasitic miltogrammines and *Leucophora* that use various solitary bee and wasp hosts have been hugely enjoyable to undertake.

Rearing Dixid larvae (*Dixella aestivalis*) photograph Mark Welch

It may be laziness on my part or just my mind-set (or both), but I shall continue to take plenty of time when I am fly-ing to "stand and stare". Sometimes less is more!

Mark Welch

Flying leaps and bounds

My descent into fly addiction has not been straightforward, but has involved surmounting a series of little barriers – each insignificant in retrospect, but at the time a big deal. The first of these, one I passed through as a boy, was getting over the yuk-response and seeing flies as creatures with different appearances, habits and names; unexpected exotica to be excited about rather than things to be swatted away or squashed. My mother-in-law will never get beyond the "dirty fly" stage. An even bigger hurdle is that of setting out with murderous intent – hunting for these new objects of desire and killing them. This is a strange way to interact with one's fellow creatures, but a great help for getting to grips with all the different families and essential for the identification of many species. A related, but additional barrier is the brutal act of sticking a pin in the defenceless corpse. Sometimes with a tough scutum or blunt pin, or when the wings shift as the pin goes through I have residual qualms about the process. In my youth I used crushed laurel leaves to kill and relax specimens – and still feel the agony of opening up the box with the previous days pinned specimens to find some survivors, usually beetles, treading air on their pin. Nowadays I find ethyl acetate and the freezer more reliable.

In contrast to these emotional reactions, a hurdle that has causes me much intellectual pain is that of engaging with dichotomous keys. A new key brings first a thrill, and then, fairly quickly, anguish in the struggle to penetrate the abstruse language, convoluted logical constructions and comparative descriptions – just how long is "long"? And inevitably, the hair-tearing moment when neither of the alternatives fit and you know you have gone wrong. Of course, when you have examples to guide you it is suddenly much easier – that really is a long hair!

What challenges could be left after all that? For me, forty years after first wielding a net, joining the Dipterists Forum was a big decision, changing what had been a casual, slightly embarrassing interest into something more serious and public. With the Bulletin and Dipterists Digest came a scary world of niche recording schemes, histograms, distribution maps, new species and taxonomic revisions – a very different world from that of the casual net swinger. Things moved pretty quickly after my first DF field meeting where the first dipterists I had ever met in the flesh turned out to be a good proportion of the UK A-list. Within a day I had learned how to use a net productively rather than stalking flies individually, what made a good pooter, the best sort of places to look, the value of micro-pinning, what a good microscope was like, and made the acquaintance of several fly families entirely new to me. Less easy to pick up was the jaw-dropping familiarity of the experts with the fly fauna as they sorted through their days catch – no pinning or leafing through keys for them – a quick glance down the microscope before jotting down the species and moving on to the next one.

Only recently, as I have progressed beyond the easier families, I have had to accept that for some groups it is necessary to expose the male genitalia. In my mind this was a fiddly process of microsurgery, and something of an insult to the sacrosanct specimen. However, now that I have got over my squeamishness about indelicately hoicking their bits out, I have discovered that flies are not quite as fragile as I had imagined, and that when unfurled their genitalia are often rather surprising!

Another big milestone for me was publicly getting an identification wrong – my first posting on the DF website was asking for help identifying a fly that I was struggling to put into a family. No wonder since, embarrassingly, it was a

hymenopteran. My future mistakes can't be much worse. A more pleasant public event was getting some Scottish firsts – first the fungus gnat *Ditomyia fasciata* (Meigen, 1818) (Ditomyidae), and then the distinctive bristle-faced tephritid *Chetostoma curvinerve* Rondani, 1856. A new British species is probably too much to hope for, as is a new species entirely, but it is gratifying to help fill in some of the white spaces for East Lothian on the UK distribution maps. Other signs of my coming of age were my first note in Dipterists Digest about some recent Scottish records of *Pachygaster atra* (Panzer, 1798) (Stratiomyidae), and launching the DF Kelp fly recording scheme, covering the big beasts of rotting seaweed that comprise the families Coelopidae, Heterocheilidae and Helcomyzidae.

A psychological rubicon was crossed very recently when a passer-by asked what I was doing with my net, and instead of mumbling something vague and defensive about insects in general I said "Flies." In the awkward silence that followed, I showed them the contents of my pooter, producing a reaction combining disbelief and distaste. However, it felt so good to have outed myself, that now I do it all the time, aiming for a tone that expresses confidence in the sanity of my activities and puzzlement that everyone isn't doing the same. It's a good conversation starter!

My most recent dipteran progress has been to send off a box of specimens to an expert for checking, which felt very like sitting an examination for which I hadn't studied properly and which I was not confident of passing. There was also the anxiety of putting my precious flies into the hands of the Post Office – not helped by having to reveal at the counter that the contents were "Dead insects". But they accepted the package, somewhat gingerly, the flies made it without flying off their mounts, and at least some of my identifications were correct.

No doubt there are plenty more challenges ahead of me – one I know about and am so far running away from, is that of mascerating gentialia in potassium hydroxide and slide mounting them for viewing under a compound microscope. For the moment, that is a step too far, so the phorids and psychodids will have to wait. And as for maggots – yuk!

Donald Smith

85%

Proportion of the planet's chalk streams present in England alone

British Flies on Flickr

Steven Falk

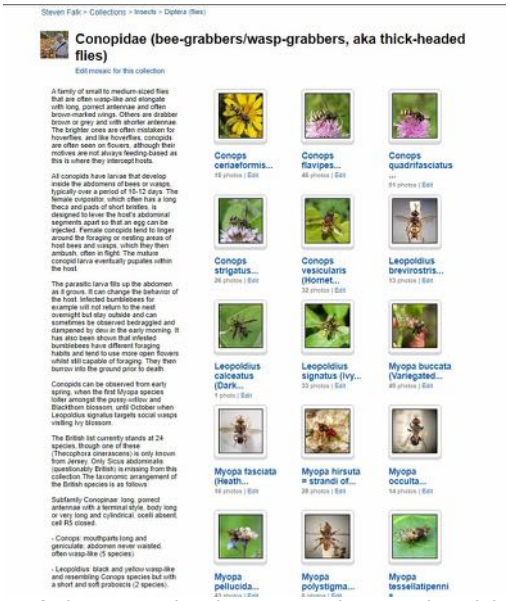
Social media offers fantastic opportunities for the Dipterists Forum to reach new audiences in new and exciting ways. Our Forum has made much use of it for many years. We have a great website and a strong presence on Twitter and Facebook, though much of this needs to be subscribed to in order to fully utilise it. Back in 2011, I was looking for ways to place my ever-growing collection of insect photos onto the internet in a way that could facilitate identification and appreciation of assorted families using a simple, flexible and readily accessible approach that did not require any form of membership or signing up by users. It was suggested that establishing an image library using Flickr in 'collections view' might be the best approach. Whilst it has some limitations, these are more than compensated for by its strengths:

- It is incredibly easy to upload and organise images in a hierarchical arrangement;
- Text can be added at every level of the hierarchy (though you are restricted to a fixed font that cannot be italicised), and live hyperlinks can be placed into the text without the need for any complex script protocols - you simply paste the url link of whatever you want to hyperlink into your text;
- Hyperlinks to Flickr cab be created at every level (order, family, genus when used, species, and individual photo) which is brilliant when you are trying to answer enquiries or showcase things in an email, tweet or Facebook message;
- Photos with decent resolution can be zoomed into, sometimes twice by repeated clicking on them – to reveal great detail;
- Images can be downloaded from Flickr – if you want to encourage pemitted usage by others, or protected from downloading if you don't want to allow this;
- The number of images that can be uploaded is unlimited and advert-free if you pay for Flickr Pro (£44/year for my last payment);
- Flickr members can easily communicate with each other via FlickrMail and by adding comments to each others photos;
- Flickr provides statistics on photo views – telling me I have had about 40 million total image views in just 8 years and letting me know how many views each of my photos has had.

Screengrab of the top of the Diptera homepage showing the alphabetical arrangement of families. You simply click on a box to progress (drill down) to the next level

I started adding hoverflies in 2012, then bees as I started to assemble my bee field guide. The site has expanded and

improved ever since as my camera and lighting set-up has evolved, my image library has grown, my expertise has increased, and a house style has established. I use Flickr to post images of living insects, pinned specimens and microscopic details of those pinned specimens. The latter two categories of image result in a virtual online museum collection, and between the specimens in my own collection, the collections of the Natural History Museum (NHM), Oxford University Museum (OUM), plus specimens fellow dipterists have provided, I've achieved near complete coverage of some fly families including the rarest species. What is more, I've been able to produce high quality photos from some of the best specimens available, showing general appearance and critical features with great clarity.



The top of the Conopidae homepage showing the alphabetical arrangement of species respectively.

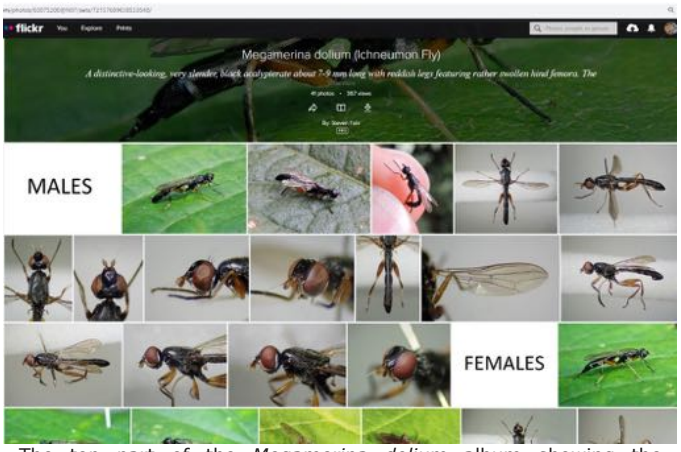
I know that many Forum members use my Flickr site but also that some do not, or not to its full potential, and many forget what's there or that what they saw in 2012 is now much improved. Having accurately-named comparative material is often crucial for arriving at accurate identifications, and visiting the NHM or OUM every time you have a query is not practical, plus they may not necessarily have good specimens, or any specimens, of what you need to check. This is where my Flickr site can save the day. So the following is an update on what is currently available on it and how to make the most of it.

Finding the site

If you type in 'Steven Falk Flickr' to a search engine you arrive in what is called my 'photostream' i.e. simply all my uploaded photos in the sequence that I uploaded them (most recent first). This is not where you want to be. Type in 'Steven Falk Flickr Collections' to see everything in neatly organised hierarchical folders. You can then drill down through order, family, genus (when used), species through to individual photos. Fortunately, the Flickr site is so well used that if you just type in Steven Falk Flickr you now get lots of options that take you directly into collections view for popular choices such as 'Diptera' or 'Syrphidae'.

Recommended devices

The Flickr site can be viewed on everything from a smartphone to a PC but the functionality (e.g. ease of navigation, zooming up images, and the ability to open multiple tabs to compare different photos) works best on a laptop or PC. It is still fun to use on a smartphone or iPad, where it acts as a rather quirky app that still provides very detailed images and access to species accounts. This can be invaluable if you are away from your computer, working in a museum or at a DF workshop or field meeting.



The top part of the *Megamerina dolium* album showing the arrangement of male and female images (latter continues below the screen shown).

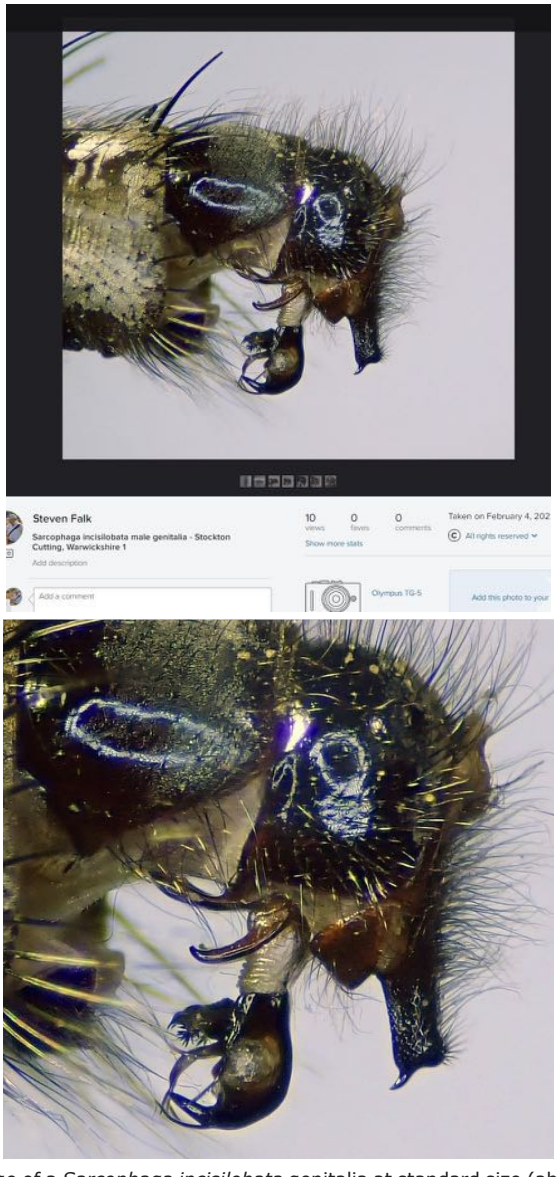


Image of a *Sarcophaga incisilobata* genitalia at standard size (above) and zoomed in following a double click of the image (below). If you open up my Flickr site in several tabs you can then bring up equivalent images for several species and quickly click between them to compare. You could also download them to create your own personal crib sheets.

Navigating British Flies on Flickr

The 'landing pad' i.e. Steven Falk Flickr Collections (https://tinyurl.com/fdv478jn) has various high level folders e.g. Insects, Mammals, Reptiles etc. Click on Insects which takes you to a page with several insect orders, then click on Diptera and you arrive at a page with several dozen fly families. Some of these family folders (e.g. Syrphidae, Calliphoridae, Sarcophagidae and most Larger Brachycera families) are at an advanced stage and provide fully or semi-comprehensive coverage of the British species. Other families e.g. Limoniidae, Drosophilidae and Muscidae are currently very incomplete and may have been created just to host albums of some rare Section 41 species that I wanted to cover. Once you click on a family, you will either get the individual species 'albums' (as Flickr calls them), or for large families such as Syrphidae, the genus folders, which then contain the individual species albums. These are either arranged alphabetically within a family folder, or alphabetically within alphabetically arranged genera within a family folder. There is no attempt to keep species or genera in any forms of taxonomic sequence – literature can do that. Searchability is the primary objective here.

Species albums

These contain both photos and text. At the top of each album you will see the species name and below this, the start of some text. If you click 'Show More' at the end of this text, the full species account appears as a drop-down box. The species account is a succinct one that describes ecology, status, distribution and usually differences from similar species. The last is designed to complement the published keys we all use which so often lack discussion of differences between species X and species Y beyond what is in the key provided. The text typically contains live hyperlinks to other useful pages such as NBN maps and any key downloadable papers. The species accounts often include much original observational information from me. For some families (e.g. Ulidiidae, Pallopteridae, Sarcophagidae) my Flickr site is currently the only place where you can find decent species accounts of all/most the British species. Feel free to quote from these and contact me if you are unsure of something I have written and need to check it or feel I should correct or update anything. Most species albums have accepted or suggested vernacular names after the scientific name. If you feel you could improve on them let me know. I don't use vernacular names much myself (and struggle to remember the ones I create) but lots of naturalists and educationalists find them useful. Critically, it makes our discipline less intimidating and my Flickr site more appealing.

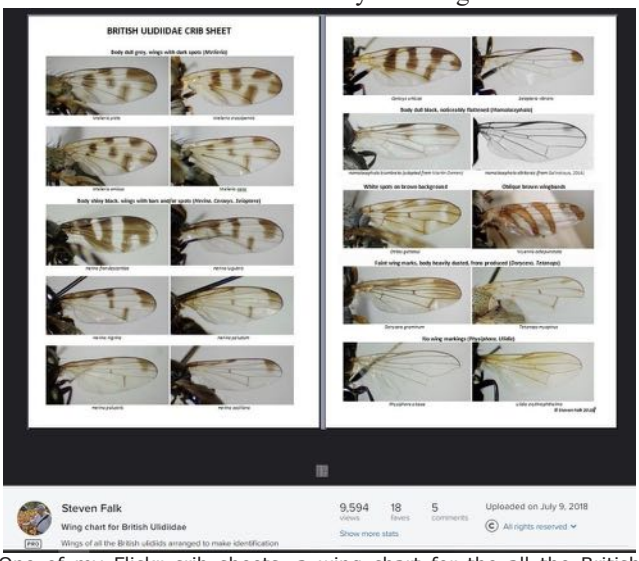
The photographs within an album are typically arranged in the following sequence: males alive, males pinned, male microscopic details, females alive, females pinned, female microscopic details, hosts (for any parasitic species), locations (for species where having photos of an actual places where a species has been found is useful). Text is also attached to the family and genus pages to provide a general overview of the UK fauna, highlight any recording scheme or Facebook group, and provide a list of key literature (with hyperlinks for anything that can be found online).

Individual photos

If you click on an individual photo, it will open up and you will see the title of the photo, any supporting text from me, any comments from others, the date the image was taken, the camera that was used, and a download option for copying the image to your computer. I do not charge for non-commercial usage of my images and do not mind them being downloaded for private, personal or recording scheme usage, but given that some folk have a rather loose interpretation of what non-commercial means, I like to be contacted (falkentomology@gmail.com or via FlickrMail) if usage falls outside these categories because there may be copyright issues (bear in mind that selling images is part of my income). If you click on an image again, it can become twice as big (if the resolution of the image is sufficiently high), and another click may even increase its size again, if the resolution is really good. This is an incredibly useful feature as t can reveal useful detail such as eye hairs, chaetotaxy etc.

Additional resources

I enjoy creating simple photo-based crib sheets to facilitate comparison of similar species, especially with bees. But there some fly ones too including the wings of pallopterids and the wings of ulidiids plus comparisons of two or more similar species such as Dasysyphus venustus and D. neovenustus and the two Dichetophora species (Sciomyzidae). Paint software has been used to add arrows and text to some of these crib sheets to more clearly highlight features. I'll try to produce more crib sheets as time allows, especially if you point out something that would be really useful and nobody in any of the recording schemes is planning to produce them. Some entomologists have already started to create their own crib sheets using my images. I find that really exciting and am always keen to see the results, and maybe place them on my Flickr site to increase their visibility and usage.



One of my Flickr crib sheets, a wing chart for the all the British Ulidiidae species.

Using Flickr in multiple tabs

On a PC or laptop you can open Flickr in several tabs simultaneously. This allows you to then open up a series of equivalent images (e.g. male Sarcophaga genitalia in side view) and switch between several tabs to compare them. Again, incredibly useful, and if you are more clever than me you may even be able to bring about simultaneous display of the different tabs on a screen so that you can have all the images side by side.

Practical uses of British Flies on Flickr

1. **Helping you identify your own material**. If you have an iPad, kindle or a smartphone, you can check Flickr images whilst you are using your microscope. You can treat Flickr as if it another item of literature, or as a convenient source of the images that you wished a handbook actually had! Remember that the Flickr site covers some really rare species, many of which lack any other photographs on the internet or in literature. What is more, it often features specimens that are newer and cleaner than anything available in national museums, where specimens can be

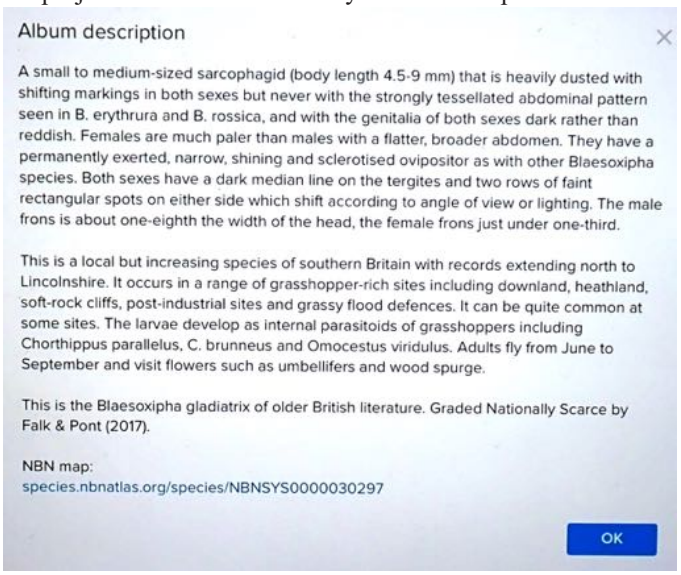
quite old. Perhaps most critically, it has been assembled by another Dipterist who has struggled with the same difficulties you might be encountering and is shaped to best address your needs.

2. **Dealing with enquiries**. If you are handling enquiries and want to show an enquirer a photo of something (maybe a whole fly alive or dead, or a specific body feature), either to confirm an ID or explain an error, you may be able to find an individual photo, or (if more appropriate), a whole species album on my site that answers the query. Just copy the url link and embed it into your response. I do this all the time on Twitter. It is such a quick way of dishing out really visual, bespoke answers to enquiries. Of course, you are not just restricted to using my Flickr site, you can do it with Martin Harvey's brilliant Larger Brachycera cribsheets, and other DF members have useful images on their Flickr sites too. You do not need any permission from me to use hyperlinks – it is precisely what the site was designed for and there are no copyright issues for this type of usage.

Using my Flickr site on an iPad during microscope work alongside printed literature at a bee ID workshop.

3. **Dipterists Forum publications and web pages**. You don't need permission to download any of my images though on some occasions I may be able to guide you to what is a better image in terms of photo quality/resolution, or an image that is most representative in terms of appearance (some of my images involve specimens kept in the fridge overnight that sometimes a bit punch-drunk and do not look quite natural).

4. **Use in workshops.** If the family you are covering is covered by my Flickr site feel free to demonstrate how Flickr works using your digital projector set-up, perhaps when explaining what free resources are out there. Yu can also keep it running in the background during a workshop, and if an enquiry crops up that can't easily be dealt with using the specimens at hand, or you want to explain something to all the delegates simultaneously, you may find it easiest to do it using my Flickr site through the digital projector. I do this a lot in my bee workshops.



A drop down species account for *Blaesoxipha plumicornis* from my Flickr site (by clicking 'Show More' at the top of the species album). Notice the blue hyperlink to the NBN map for that species at the bottom of the text.

5. **As a recording scheme 'resource'**. Most of the recording schemes have a resource tab on the homepage, but these are often empty – in fact these home pages can be pretty unfriendly to a newcomer in my opinion. How about providing a hyperlink to the appropriate part of my Flickr site so that people can get an instant feel for a group, and how about reminding people of its existence or of any big updates to it under news items? Most recording scheme organisers tell me how useful it is but then fail to do anything to link it to their pages. Creating a link is so simple.

Current family coverage (May 2021)

1. Comprehensive or semi-comprehensive species coverage: Acroceridae, Asilidae. Athericidae, Bibionidae (specimen photos need upgrading), Bombyliidae, Calliphoridae (incl' Pollenidae) , Campichoetidae, Coelopidae, Conopidae, Diastatidae, Dryomyzidae, Heterocheilidae, Oestridae, Pallopteridae (with a wing chart), Platystomatidae, Rhagionidae, Rhiniidae, Rhinophoridae, Sarcophagidae, Scenopinidae, Sciomyzidae, Ulidiidae (with a wing chart), Stratiomyidae, Syrphidae (specimen photos are being upgraded), Tabanidae, Tanypezidae, Therevidae, Xylomyidae, Xylophagidae.

2. Incomplete coverage: Anisopodidae, Anthomyzidae, Drosophilidae, Empididae, Limoniidae, Micropezidae, Muscidae, Psilidae, Strongylophthalmidae, Tachinidae, Tephritidae.

So there you have it. Explore it, try the multiple tabs approach, and get familiar with it so that you can navigate it intuitively. At the point of writing, I'm just finishing off the Sarcophagidae and am really pleased by how far I've managed to push the set-up. Future projects are likely to include Muscidae, Scathophagidae, Tachinidae, Tephritidae and Micropezidae. But even groups dominated by small species such as Chloropidae, Ephydridae, and the Empidoidea could be covered well using the current approach.

Steven Falk

Recording

Though the late winter is a quiet time for recording it's a busy time for dealing with all those records that have been submitted.

The main features in this Bulletin are:

- An update on iNaturalistUK
- How to get maps from NBN Atlas
- The Bulletin's customary run-through of what the Diptera Recording Schemes are getting up to
- Reports on Dipterist Forum Field Weeks and datasets that are now on NBN Atlas
- The Steve Falk records digitisation project

Lots of data shovelling was involved, it all ran perilously close to interfering with my getting out and about to hunt for flies. Thank goodness they were delayed by frost and wiped out several times by torrential rain until mid-May when the season actually started. Or did it?

Biodiversity Open Data

I took a stab at it following NBN's article about it, GBIF's "**Biodiversity Open Data Ambassadors**" that is. I filled in an online application form and got an automatic acknowledgement reply (no accepted/rejected message) and thought no more of it, apart from quizzing NBN's Sophia Ratcliffe to see what she thought of it all.

Much to my surprise, in May I got an invitation to a GBIF online seminar. One of those "how shall we go forward" sessions led to a conference on the same. The invitation came with a GBIF website link listing all these ambassadors - and it appears my application was successful. After a little exploring I discovered I was able to log on to their forum where I immediately got an answer about how to set about adding taxa to those missing from GBIF's list (see https://data-blog.gbif.org/post/gbif-backbone-taxonomy/).

I have to admit that at the level that these people are discussing subjects, a good deal is over my head. But like any advanced technical topic there's always something relatively straightforward that can be plucked from texts. This is taken from their Community Forum Topic regarding "*global specification for data integration*" in which it seems a group of organizations and individuals are working collaboratively towards a global specification and interoperability for the digital specimen (that's a record to you and me, specifically a record of a specimen in a museum or personal collection):

> A growing consensus of the collections-based natural sciences community views further and deeper digital data integration as essential to making data more relevant, more easily **findable, accessible, interoperable and reusable** (**FAIR**) for the research and policy work needed to address global issues. (http://bit.ly/esdsconsult)

That useful acronym (FAIR) and this short report means for the time being I've done my ambassing.

Darwyn Sumner

Biodiversity Open Data Ambassador

Mapping Species Data

The report "**Mapping the Species Data Pathway: Connecting species data flows in England**" is well worth a read as it talks about us and the organisations which support our recording efforts.

There's an introduction to it on the NBN's site at https://nbn.org.uk/tools-and-resources/publications/reports/

A little puzzling at first to make the link between the commissioning organization and us as recording naturalists but the author names are familiar: ALERC's Steve Whitbread & Tom Hunt, NBNt's Jo Judge and BRC's David Roy & Martin Harvey. It was prepared as a report to a government initiative (Geospatial Strategy) so the preambles are rather lengthy. Skip to the middle though and here are all sorts of fascinating charts and figures. I especially liked the chart which shows that 76% of data on the NBN Atlas is provided by National Recording Schemes (p25) and the chart which shows that the number of Schemes for invertebrates tops all other groups by a mile (p32) - and half of those are our Diptera Recording Schemes.

There's a lot to absorb in this report, far too much to detail here, but it does create a lot of links between our recording efforts and its (*contentious* - Ed*) value in terms of conservation and legislation outcomes such as:

> *Biodiversity net gain will become a mandatory part of the **planning process** within the next two years. The proposed metric for calculating gains (Biodiversity Metric 3.010**) uses a habitat proxy to determine pre-and post-development biodiversity units and resulting gain obligations in a standardised way. More developers will be obliged to have regard to biodiversity – and at a much earlier stage in the planning process than is the case at present.* (maybe the BBC avoid mentioning this link in their frequent discussion programmes on Planning because that metric has been so universally condemned by ecologists and naturalists - see Conservation.)

Some of the material concerns cost-benefit analyses of the value of our recording efforts, one notable figure being the State of Nature's estimate that the financial value of volunteer effort to conservation in the UK was £20.5 million per annum. Nice also to see acknowledgement of our costs "*Some recording schemes receive no funding at all and while others may receive funding for data collection or monitoring schemes, **most bear the full costs of data management.***"

A little disappointing that there's no mention of the NHM's contribution via their Scratchpad initiative but that's outside the report's scope and falls into the realms of education, publication and research. iNaturalist too is a little thin on the ground (see below) though image recognition and machine learning features in the report (iNaturalist being the only place to get that.)

FAIR principles are espoused widely throughout the text with many comparisons to **Open Data** principles. They're not quite the same to those who build the data-sharing infrastructures but for us recorders the differences might be just semantics.

Download the report at https://tinyurl.com/te6r23ss

> *Worse perhaps than previous systems described as "*a subjective and unscientific baseline for judging the state of our finest habitats*" (Denton, 2014). Reviews of Seuss, Goulden, Gould & Weston and reports by Welch & Webb in this issue suggest the concept of **DAFT** principles: **destructive**, **anthropogenic**, **fiscal** & **toxic** would be apposite.
>
> **By their very nature, non-statutary "guidelines" are unenforceable and open to abuse. Such is the case in respect of the MOD's plan to sell the important acid grassland, the Middlewich Ranges to Colchester council for housing development by inventing their own metric. The MOD are asking experts "to find innovate means to help secure biodiversity." (Observer 11/7/21) Ideas anyone?

Darwyn Sumner

Recording Methods

iNaturalistUK

Another can of worms ?

Another place to put your records. Is this yet another separate and unconnected data silo to further confound Recording Schemes who want to produce distribution maps or carry out other analyses on UK data?

NBN Atlas is the key place to upload to, the clue is in the name: you get a full distribution map if all the data is on there.

NBN negotiated with iNaturalist to set up this new collaboration, iNaturalistUK. A handful of UK recorders immediately began to explore just what this meant for us. Steve

McWilliams (one time manager of Cheshire's LRC) set up a project for all UK taxa, Sam Rees (sbushes, top European identifier for Diptera) discussed issues and I started a topic on their forum to initiate debate.

The topic of iNaturalistUK is therefore discussed on the iNaturalist Forum at https://tinyurl.com/juktxfh5

If you want to know what it means for UK recorders then this thread is a must. It features comments by myself, Steve & Sam who made many positive observations regarding the value of iNaturalist.

These were Sam's comments:

- Use of the autosuggest. Being able to get an instant idea of genus, family, or even order(!) is a massive help when you are first starting out and learning.
- The more UK users feed images into the training model, the better it will become at being able to ID UK species, so it gives one a sense of contributing to this bigger goal too.
- Being able to help others with identification makes one feel less like one is just taking without giving - which is how the Facebook groups can feel at times. The iNat system is more like a skill-sharing and learning / teaching opportunity.
- In addition, it is just more of a social and community space to record in. The Facebook groups are like this in UK, but the Facebook groups don´t automatically record any of the data which passes through them and simply aren´t built for biological recording. Meanwhile, though iRecord is built for recording, its not a social space.
- Exceptional design! The user friendly interface isn´t just easier to use than the other options, its also speedier to use. You can upload a lot more observations in a lot less time. This means more time spent out and about enjoying nature itself.
- Sharing a support network with the broader global community is really helpful (there are experts on iNaturalist in some areas that we simply don´t have in the UK for example)
- Better awareness of global biodiversity - great way to armchair travel!

Undoubtedly these comments will be taken up by NBN and find their way onto NBN's website.

Community Photo Album?

Steve Falk raised the issue of a community photo album with me in one of our discussions. He can't feature other folk's images on his Flickr (see his gallery in the Sciomyzidae Newsletter in this issue) and the Diptera.info style of gallery is beyond Dipterists Forum's capabilities. The iNaturalist projects don't have the flexibility (yet) to provide the additional factual information like Steve does on his Flickr but they will capture everyone's images and present them in a tidy (though unstructured) format.

Probably the best project to illustrate this is Steve Crellin's Sepsidae one at https://tinyurl.com/8pa8xsxd Just navigate to "Most observed species" and select "View all" to see a gallery. Imagine something similar for other small Families (UK only), these are all linked on our Recording Scheme pdf (see back pages.) None of the available systems are ideal, Flickr perhaps comes closest (see Steve Falk's article in this Bulletin) but iNaturalistUK is worth experimenting with because, as Sam says, it records too.

Significance for Recording Schemes ?

With 9,241 UK users currently using iNaturalist's AI/ autosuggest to get ballpark identifications. it seems likely that this means of recording will be used more extensively in the future. Their verification sysyem has given rise to much debate but does attract many experts across the world. Different groups attract different verifiers of course and though some material may languish unidentified indefinitely, nonetheless recorders are unlikely to upload to a second system once they've posted here. As for Recording Schemes and those with identification skills, please take an interest in iNaturalist. There's a lot of UK material up there and only a handful of Schemes addressing those identification backlogs. Join iNaturalistUK, set up a project (so easy to do) and at least see who is recording your group.

UK Checklists

Need a checklist of your Diptera group of interest?

Chris Raper has updated the site where you can get these. He calls it the UKSI Sandbox and it can do a few useful things. From the Search tool you can enter a Family name and view or download an Excel spreadsheet. From the Taxon-match tool you can send your batch of spreadsheet records to check that you've spelled all the names properly.

Try it out at https://uksi-sandbox.nhm.ac.uk/index.php

NBN Atlas & maps

The NBN team are currently working to improve the presentation on the NBN Atlas site.

Type the name of a species into your internet search bar followed by "NBN" and you'll easily locate a map of that species' UK distribution.

If you find that a little tedious to type out it's possible to create links so that you only need one click to get your map. These are called Easymaps, you could make a collection of links for species you frequently check using Microsoft's OneNote. Try adding the following line to a page there:

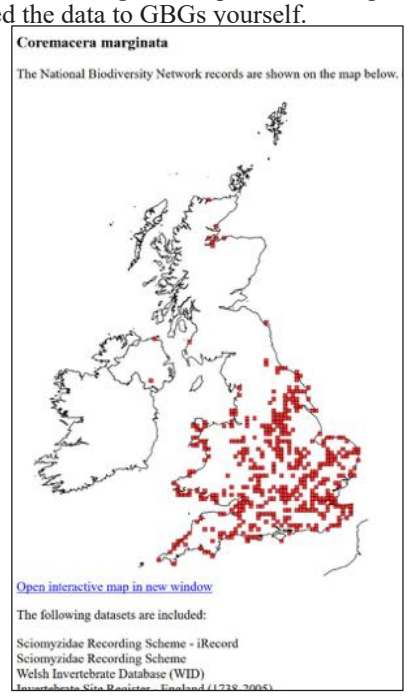
https://easymap.nbnatlas.org/EasyMap?tvk=NBNSYS0000012992&w=432&b0fill=ff0000&retina=2

That one is for *Coremacera marginata;* to change the species just swap in a different UKSI number, you can find lists of those using Chris Raper's new UKSI Sandbox. Increasing the blue number gives you a bigger map and to get different coloured tiles change the Hex Colour Code.

[The tinyurl is no good for this exercise of course, but if you want to get there fast use https://tinyurl.com/jxefh2np]

Matt Harrow has tried this out and favours it for quick visualisations and his own crib sheets together with habitat notes.

Not exactly "publication quality" though, as Lincolnshire's Charlie Barnes points out. Which means that if you've an article to publish which contains distribution maps then you've a problem. The pace of recording is so fast nowadays that if you submit an article containing distribution maps to a journal and it takes a year to get to get to print then the maps are out of date by then and the article gets critiqued on those grounds. Even if you uploaded the data to GBGs yourself.



The above shows in your explorer when you click on the link in OneNote. The map image can be selected and downloaded if you wish

Recording Scheme News

Sciomyzidae Recording Scheme

A couple of enquiries early this year, one for Scotland (Aberlady Bay) and one for the Norfolk coast (for a biodiversity audit by University of East Anglia) regarding Sciomyzidae made me aware of my tardiness as regards uploading species occurrences to NBN Atlas. Making existing records available as open data means that enquirers can consult the Atlas rather than me, both enquirers had searched there in vain.

As a result I've uploaded all the records ever sent me as scheme co-organiser **and**, working with Matt Harrow and Martin Harvey set up a dynamic iRecord system which will pop anything verified on the BRC silo across to NBN Atlas at intervals (just like several other Recording Schemes.) Matt's been doing the iRecord verifying (me nary a one) so if you've any more records (or I missed any) then let us know. Spreadsheet datasets can be uploaded to iRecord and bulk verified straight away, otherwise just use iRecord in the normal way.

So far we've uploaded 10,710 records this year, putting the Scios into 5th place. There are 2,446 more to come when the Steve Falk records I extracted and submitted to NBN are uploaded.

Newsletter #7 in this Bulletin

Darwyn Sumner

Agromyzidae Recording Scheme

Barry's Scratchpad site is looking good at https://agromyzidae.myspecies.info/ Find his many newsletters there.

Barry Warrington agromyzidaers@gmail.com

Hoverfly Recording Scheme

Newsletter #70 in this Bulletin

David Iliff davidiliff@talk21.com

Cranefly Recording Scheme

Newsletter #37 in this Bulletin. See Review for new book "British Craneflies" by Alan Stubbs and an iNaturalistUK filter at https://tinyurl.com/mhktp6fr shows the 4,000 that were already posted by this August.

John Kramer john.kramer@btinternet.com

Flat-footed Flies Recording Scheme

Sam Rees has set up an iNaturalist project for this group. See https://tinyurl.com/frj58cwb

There are 35 observations so far, most of them are very nice pictures. (*Ed.*)

Scheme Organiser: Peter Chandler chandgnats@aol.com

Stilt & Stalk Fly Recording Scheme

The species *Chamaepsila pectoralis* (Meigen, 1826) found in Shetland by Roger Thomason has been added to the UK list and to the UKSI. Look out for it at https://tinyurl.com/xjrperk | https://micropezids.myspecies.info/taxonomy/term/112 , in the field and amongst your specimens.

Details will be in the next Newsletter.

Darwyn Sumner Darwyn.sumner@ntlworld.com

Empid & Dolichopodid Recording Scheme

Newsletter #26 in this Bulletin

Martin Drake martindrake2@gmail.com

Lesser Dung Fly (Sphaeroceridae) Study Group

Coordinators: Andrew Cunningham (ajc321@hotmail.com) and Mark Welch (m.welch@nhm.ac.uk)

Welcome to the first Lesser Dung Fly Study Group newsletter! The group was formed in June 2021 in response to growing interest in this fly family. The idea behind the group is to promote the study of Sphaeroceridae by providing support to dipterists through help with identification, sharing tips on identification and study methods (at home and in the field), and coordinating targeted surveys of genera or individual species, all under the auspices and guidance of Dipterists Forum. The LDF study group webpages contain downloadable PDFs of Pitkin (1988) and numerous papers by Jindřich Roháček and Stephen Marshall on keys and ecology of the World fauna. Paul Gatt is the taxonomic expert for this study group.

We encourage DF members to submit news for adding to the group's website and Bulletin newsletter. Items should be sent to Andrew Cunningham (ajc321@hotmail.com) and Mark Welch (m.welch@nhm.ac.uk) who manage the LDF study group site and prepare the newsletter. Andrew and Mark also coordinate the study group and are the initial points of contact for enquiries. At this point in time the LDF study group is not a formal recording scheme, although we have 10,000+ records (mostly from Dave Brice and Andrew Cunningham).

That there is not a Sphaeroceridae recording scheme may reflect the kind of identification challenges associated with this fly family: most are small (<5 mm) to tiny (1 mm) dark flies that need to be mounted and sometimes dissected to display subtle features of body parts, including genitalia.

The **Sphaeroceridae of Britain and Ireland** currently comprises 141 species in 33 genera and 3 sub-families: Copromyzinae (18 species, 5 genera), Sphaerocerinae (10 species, 3 genera) and Limosininae (113 species, 25 genera). Distinction at sub-family level is easily done using wing venation. There is a wealth of identification aids available for this family. The key to the British fauna is Pitkin (1988) and is a useful guide and first port-of-call, although another 27 species have been added since its publication.

There are very few studies of the immature stages of these flies. Skidmore (1993) provides a key to puparia of many British sphaerocerids.

Specimens are usually pinned/card-pointed, with any separate genitalia held in glycerine in a vial that is pinned with the specimen. Dissection of terminalia, particularly for limosinines, is sometimes necessary for definitive identification. Specimens can be dissected and slide-mounted along the lines of Disney (1983).

To reiterate…. the main purposes of setting up this study group are:-

1) To promote the study of Sphaeroceridae by forming a network of specialists (not necessarily experts!) who share an interest in this family and to exchange information, ideas and tips on study methods, both in the field and at home.

2) To undertake targeted surveys of particular species or genera to improve knowledge of their likely status and habitat requirements.

3) To study behaviour, phenology, immature stages and interactions with other invertebrates.

4) To help with identification and the recognition of new-to-Britain/Ireland species.

Recent highlights

Papers by DF members on Sphaeroceridae to be published in Dipterists Digest 2021(2) that we know of:

D. Brice & P.J. Chandler (2021) Rachispoda uniseta (Rohacek) (Diptera, Sphaeroceridae) new to Britain. Dipterists Digest 28, 147-148.

Dave Brice and Peter Chandler examined specimens from Bedfordshire, Berkshire, Cambridgeshire and Norfolk to provide a formal description of this species as new to the British Isles.

D. Brice & R. Mitchell (2021) Recent records of Minilimosina secundaria (Duda) (Diptera, Sphaeroceridae) from Berkshire. Dipterists Digest 28, 171-173.

Ryan Mitchell and Dave Brice report the second UK record of this species, currently listed as "extinct" (Falk, Ismay & Chandler 2016), from Ryan's very productive semi-ancient woodland site on downland in Berkshire. The species' status is now Data Deficient and we look forward to seeing if Ryan can find more specimens and learn some details of its phenology.

M.D. Welch & D. Brice (2021) Thoracochaeta johnsoni (Spuler) and Thoracochaeta valentinei Roháček & Marshall (Diptera, Sphaeroceridae) in Norfolk. Dipterists Digest 28, 135-146.

This paper reports the discovery of two rarely recorded species of "wrack fly" from the meagre (and wrack-free!) strandline at Old Hunstanton, West Norfolk during Oct-Dec 2020. Of the 15 sphaerocerid species recorded at the strandline, *T. johnsoni* constitutes 81% of the 1346 specimens sampled and 86% of all *Thoracochaeta*. Why this officially "alien" species is so abundant at the strandline relative to the usual two common *Thoracochaeta* species *T. brachystoma* and *T. zosterae* remains to be elucidated. It has probably been along this stretch of coastline for over 30 years. The species' primary distribution is along the Pacific coastline of North and South America, although it has recently also been found in Japan.

A heap of fun during lockdown

Mark Welch writes ….

Within the constraints of "staying local" during the second Covid-19 lockdown in the UK, I decided to explore the sphaerocerid fauna of local horse-dung and silage heaps within a mile of Ely, near Cambridge (V.C. 29). Efforts were focused on one particularly productive roadside heap, making nine visits from late January to June; the heap was removed for spreading over fields in early July. This heap samples deposits from a farm 0.7 km away and comprises a mixture of horse-dung and bedding straw. Between 8 and 14 water traps (white bowls) were run for one or two days, usually furnishing several hundred sphaerocerids. The most abundant species throughout these months were *Opalimosina mirabilis* (the most consistently abundant), *Coproica ferruginata* (several short-lived mass emergences), *Coproica vagans*, *Coproica equina* and *Ischiolepta pusilla* (only males used for ID). *Ischiolepta vaporariorum* (only males for used ID) was also frequently encountered.

A total of 30 sphaerocerid species was recorded in these few months, some of which are less recorded or likely uncommon species that include *Ischiolepta scabricula* (2m, 4f), *Trachyopella atomus*, (7m, 11f), *Coproica pusio* (2m, 2f) and *Telomerina pseudoleucoptera* (1m, 1f). Of the four *Trachyopella* species recorded at the heap (*atomus, coprina, leucoptera, lineafrons*), *T. atomus* is very rarely recorded in the UK; there are no records of it in the NBN database. Pitkin (1988) reports a single male from Suffolk in 1980. Dave Brice (Fakenham, Norfolk) has two records from Banham Zoo (Norfolk) on giraffe dung. In their review of acalypterates Falk, Ismay and Chandler (2016) state that *T. atomus* is one of the sphaerocerids that should be targeted by recorders to get a better idea of its status and habitat preferences.

The occurrence of several uncommon or rarely recorded species of sphaerocerid at the dung-heap may bear on the nature of recording, namely that persistent sampling throughout the year can "fill-in-the-gaps" to some extent and may be indicative of the level of (under)recording of this fly family. Following the faunal changes (not just of flies) on a fortnightly basis gave a real sense of the rapid turnover of species, with sudden explosions of staphylinids and hemipterans. Examining the contents of a bowl under the stereomicroscope gives a sense of the predator/prey mayhem enacted in the heap.

News from Devon

Andrew Cunningham writes …

Generation of sphaeroceridae records have dropped during the warmer months. The increase in fly diversity and abundance means one puts the less distinctive sphaerocerids into a small vial of alcohol to be looked at in the winter. The trouble is, one also looks for sphaeroceridae in winter! This adds to the ever-growing backlog.

The most recent highlight has been finding Trachyopella bovilla using a modified hand vacuum around cattle dung near Burrator Reservoir on Dartmoor. It was thanks to Dave Brice I got this identified as it is not in the Pitkin key. I must find time in the winter to go through the various Sphaeroceridae papers and update my identification resources at hand.

As mentioned above, I have a modified hand vacuum which is useful when travelling with without a car. I have also been able to fashion a motorised pooter which is safer when sampling directly from rotting vegetation, seaweed, dung or carrion. I shall expand on these collection methods for the next newsletter.

References cited

Disney, R.H.L. (1983) Scuttle Flies, Diptera, Phoridae (except Megaselia). Handbook for the Identification of British Insects, Vol 10, Part 6.

Falk, S.J., Ismay, J.W. & Chandler, P.J. 2016. A Provisional Assessment of the Status of Acalyptratae flies in the UK. Natural England Commissioned Reports, Number 217.

Pitkin, B.R. (1988) ; Lesser Dung Flies, Diptera, Sphaeroceridae. Handbook for the Identification of British Insects, Vol 10, Part 5e.

Skidmore, P. (1993); Notes on the puparia of British Sphaeroceridae. Dipterists Digest 13, 6-22.

NBN Atlas datasets

Dipterists Forum Field Weeks

Considerable progress has been made in compiling the data from the Dipterists Forum field weeks. This year 15,218 Field Week records have been added to the NBN Atlas.

Together with recent Recording Scheme additions this **doubles** the Dipterists Forum total on our page at https://registry.nbnatlas.org/public/show/dp172 to 63,182. Recording Scheme's iRecord transfers keep increasing this figure.

The following table indicates the current status of the NBN Atlas Field Week uploads:

Year	Region	NBN Atlas	#
1981	Kent	uploaded (May 2021)	1970
1999	NW England	uploaded (June 2004)	4994
2000/2001	Cornwall	uploaded (March 2005)	2807
2002	Inverness	uploaded (March 2017)	1158
2003	Suffolk	11th to 18th July	
2004	Wiltshire	30th May to 4th June	
2005	Durham	2nd to 9th July	
2006	Lewes	24th June to 1st July	
2007	Aberystwyth	14th to 20th July	
2008	Cairngorms	29th June to 5th July	
2009	Swansea	4th to 10th July	
2010	Pembroke	22nd to 25th July	
2011	Exeter	3rd to 8th July	
2012	Speyside	22nd to 28th July	
2013	Lancaster	6th to 13th July	
2014	Bangor	ongoing - 3 contributors	~800
2015	Nottinghamshire	uploaded (2016)	3711
2016	Canterbury	uploaded (June 2021)	6416
2017	Snowdonia	uploaded (May 2021)	6822
2018	Stoke	uploaded (March 2020)	7407
2019	Stirling	43% from iRecord verifiers	5586

For this simplified list I've chosen a red/amber/green theme to better indicate the status of these Field Week records. Those in green will be found at https://registry.nbnatlas.org/public/show/dp172 For full details of the status of the pre 2015 datasets, refer to the chart on p12 of Bulletin 81. For accounts of our meetings from 1973 to 1998 consult "A Review of field meetings" (Stubbs, 1999) in Bulletin 47. The last two of those were published in

Howe, M. A. 1998. Field Meeting of the Dipterists Forum at Abergavenny, June 1997 (Report No. 98/5/2). Nat. Sci. Rep. 98/5/2.

Howe, M. A., M. J. Parker, and E. A. Howe. 2000. Dorset Field Meeting 27 June to 4 July 1998. Dipterists Forum Occas. Publ. 1: 167.

Records appeal: the missing decade

The decade from 2003 predates the NBN Atlas and should have somewhere in the region of 50,000 records. If you attended any of those Field Weeks and kept records at the time then it's still possible to make some progress. Four or five datasets from a meeting is enough for us to undertake an NBN Atlas upload (as was the case for the 2002 Inverness meeting.) **So please have a dig through your old spreadsheet lists and see what you can do**. The difficulty, as always, lies in getting a response from anyone involved in recording over those periods so we're grateful for those who have responded.

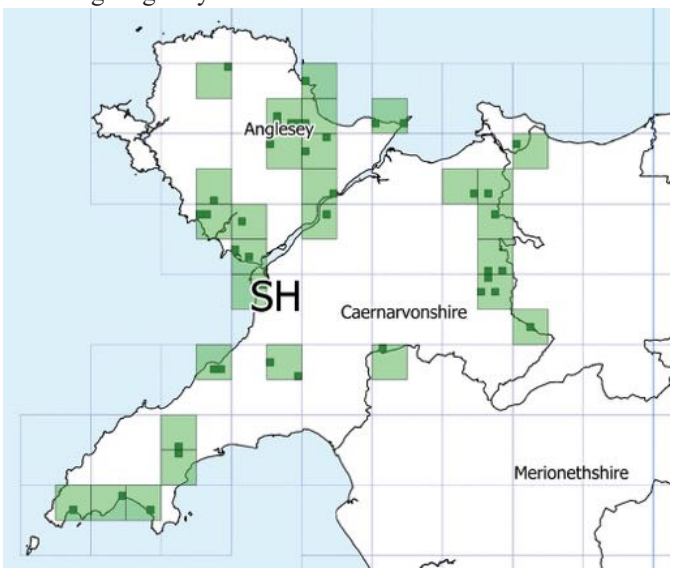
By the time the next Bulletin is published we hope that we'll have turned some ambers to green and many of those reds to amber.

When Recording Schemes come to make analyses from records or construct distribution maps, it's clear that the datasets from these meetings are most important. Records hotspots from Field Weeks show up clearly on some maps and for smaller Schemes these might be most of what they have, e.g. *Coelopa frigida*.

Bangor 2014 (6th to 11th July)

Roger Morris organised this one for us; it was his last (except for some Spring meetings.) After an extraordinary run of 10 years in this role and a huge amount of hard work for Dipterists Forum, Roger resigned as Field Meeting Secretary that summer.

The region covered nicely complements the Snowdonia map below, we covered all the rest of the NW corner of Wales, including Anglesey.



Records appeal

Following the success of the appeals in the Bulletin for "historic" records (see Snowdonia 2017 below), we're concentrating on this one now. Participants weren't asked to send any records to anyone but it's not too long ago and hopefully you can still dig out your spreadsheets from that time.

So far I've got the records from Roger Morris, Rob Wolton and myself (totalling ~800.) I've tried to figure out who else attended using my photographs but I've not got far.

Did you have a lovely time the week you went to Bangor?

Then send me your spreadsheet records please so that they can be put on NBN Atlas.

Darwyn Sumner (darwyn.sumner@ntlworld.com)

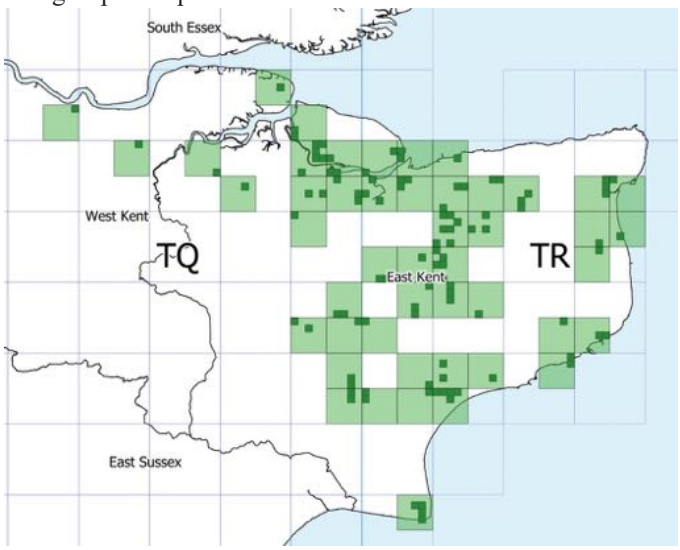
Stratiomys chamaeleon at Nant Newydd [D.Sumner]

On behalf of the Recording Schemes who work so hard to encourage the study of their groups, many thanks for your trouble in submitting records.

Canterbury 2016 (2nd to 9th July)

First introduced in Bulletin 80 (p30) with Howard Bentley and Amanda Morgan organising the expedition and Amanda announcing the full details in Bulletin 81 (p38). Afterwards Alan Stubbs was quick off the mark in writing up an account of the meeting in his usual British Wildlife style in time to catch the Autumn Bulletin (82, p14) which also contains reports from Jann Bilker, our youngest member. Andrew Halstead's Sawflies report details the week's finds too, he awards a jar of honey to the person catching the most sawflies during the week - Andrew Cunningham this time. Finally it has a summary of Kent Field Club's Laurence Clemons presentation made at the start of our expedition; he'd also selected many choice locations for us and organised permissions. Laurence (who organises the Tephritid Recording Scheme) subsequently collated and compiled the records from this Field Week. He also provided summaries of progress in Bulletins 83 (p6) & 84 (p16). Well worth downloading and reading those Bulletins from our DF website, the Canterbury accounts are probably DF's finest (the pdfs are in colour from a time when print copies were only in b&w.)

The geospatial spread was as follows:



6416 Diptera records

The Dungeness party set out [D.Sumner]

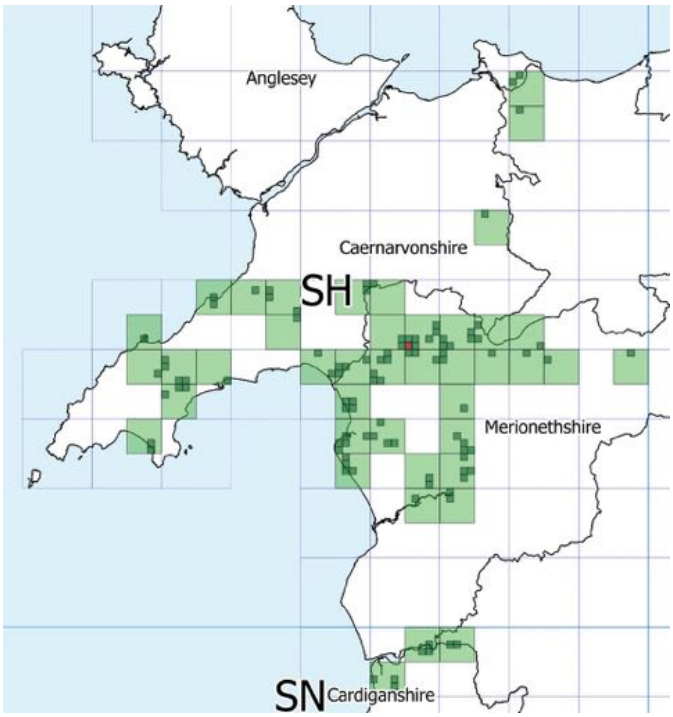
Kent 1981 (18th to 25th July)

To find information about the early Field Meetings you have to search through some very old Bulletins. The announcement for this one is in Bulletin 9. The chances of a coherent dataset from pre 1997 meetings is quite remote after so many years but this one coincides with a meticulous County Recorder, Laurence Clemons, who kept good records and has come up trumps with some 1,970 records.

Snowdonia 2017 (10th to 17th June)

A little delayed but finally all the work has been done on our 2017 Field Week and the records have been uploaded to the NBN Atlas. It can be found at the usual place - https://registry.nbnatlas.org/public/show/dp172

This is the geospatial spread of records over the week from 10/06/2017 to 17/06/2017



Large pale green squares are 5km, dark green 1km and the red one is our base at Plas Tan y bwlch. Outliers arise from contributors travelling to our base and home again.

Mike Howe did all the collection and collation, working on everyone's submissions up until April 2020. After adding one or two stragglers (including my own), I then restructured the dataset to suit NBN's required Darwin Core format. Then worked with Chris Raper to get all the contributor's taxon names to match the UK Species Index (verification). I then carried out a geospatial analysis to fix all those records which finished up in the sea (validation). Finally made late corrections from contributors who kindly responded to my appeal in the last Bulletin. An extraordinary team effort - many thanks to all involved.

Data quality

All the records were submitted in the form of spreadsheets, users constructing them either via recording applications such as Recorder or building their own in Excel. The latter method can give rise to errors, both as "typos" in species names and as geospatial mistyping. Each takes a fair bit of tracking down and correcting, there was a lot to do on the taxon names even after Chris Raper's "*Blimey, that was hard work*" when matching names to the UKSI and though some mistyped grid references could be spotted as they finished up in the sea, others were not so easily found. Some means of displaying them on a map is essential for this kind of checking, the standard method is using the FSC tools (Tombio) within QGIS, that's how I got the map above. Most errors are caused by transposing grid reference digits, some may still have been missed.

Despite all the online gadgets you'll find which place markers on detailed maps, grid references in a spreadsheet still pose a problem. The simplest means of checking from a column of

grid references in a spreadsheet is to copy them and paste into the Ordnance Survey's **Batch Convert tool** (https://gridreferencefinder.com/batchConvert/batchConvert.php) It'll show them on various maps and if you want to get really critical then you can save as a kml file and import that into Google Earth; time that right and you might see a satellite image of yourself swinging a sweep net.

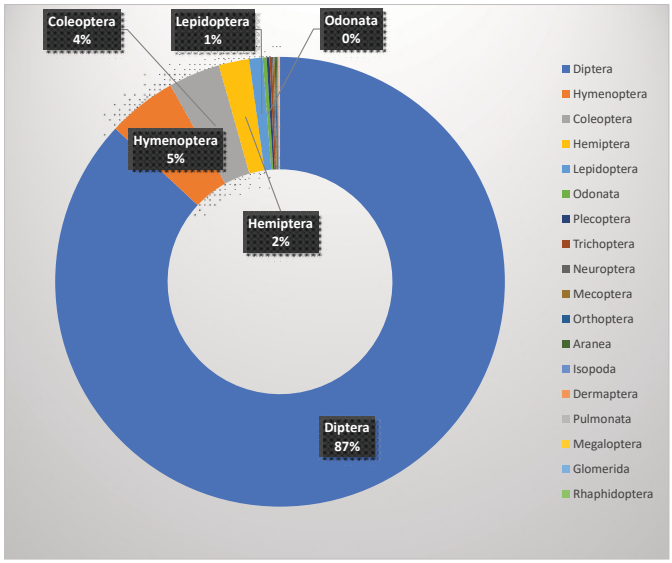
Standard biological recording applications have only rudimentary mapping tools, they're pretty fair for taxa though.

Taxon names are somewhat easier to address. Simply download a spreadsheet of your favourite taxa from Chris Raper's UKSI checklist (not "all Diptera", that would be huge) and learn how to use Excel's VLOOKUP. No need to hand-type any taxon name ever again.

Orders recorded

A broad mixture of invertebrates were recorded by contributors amounting to 6822 species occurrences. In the main these were Diptera plus a number of Symphyta but a wide range of other groups are to be found in the dataset, reflecting the interests and identification skills of those attending our Field Week.

The following chart indicates the proportions of species from the various Orders recorded in Snowdonia:



Orders below Odonata in the above list had fewer than 19 records.

Earwig recorders to the dataset will be interested to learn that the UK's sole representative *Forficula auricularia* is now split into 4 species which cannot be distinguished morphologically (Sutton & Beckman, Britsh Wildlife April 2017)

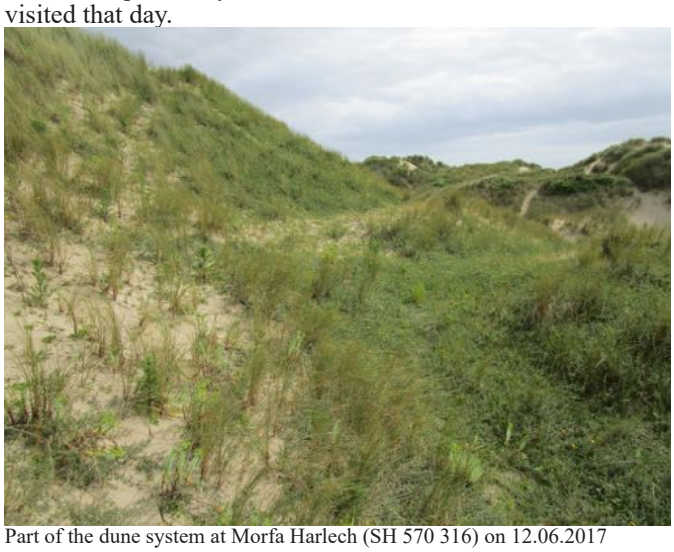
Lunch break at Morfa Dyffryn [D.Sumner]

A week in Snowdonia

Andrew Grayson's expedition diary:

Notes on the Dipterists Forum Summer Field Meeting 2017 Based at the Snowdonia National Park Centre, Plas Tan y Bwlch, Maentwrog, Blaenau, Ffestiniog, LL41 3YU From Saturday 10th June 2017 to Friday 16th June 2017

The 2017 Dipterists Forum Summer Field Meeting was based at the Snowdonia National Park Centre. My fieldwork was solitary on most days, apart from Monday 12th June, when I was accompanied by Dawn Painter to the four sites which we visited that day.



Part of the dune system at Morfa Harlech (SH 570 316) on 12.06.2017

Without checking the details beforehand, I had just assumed that it was a Saturday to Saturday meeting, so it was somewhat disappointing to realise that the week ended on the morning of Friday 16th June; hence, there was only 5 full days of fieldwork available, and the weather during the week was generally unsuitable for assemblages such as Tabanidae and Oestridae. The best day weather-wise was Wednesday 14th June, but I rather wasted those conditions by foolishly spending too much time on a long drive to Cors Geirch, which wasn't a very productive site that day. Nevertheless, all things considered, it was an enjoyable week, and great to see so many friendly entomologists again.

Saturday 10th June

It rained a lot today, and the rain only abated shortly before I arrived at the Snowdonia National Park Centre in late afternoon. Before the meal, there was just enough time for me to have an hour or so walk in the woodland immediately north of the Centre at Plas Tan-y-Bwlch (SH 654 405). This woodland was on a scree slope with disused quarries. It contained lots of moss, and a good number of mature Japanese Red Cedar trees (*Cryptomeria japonica var. sirensis*) [labelled as such].

Sunday 11th June

The weather was very similar to that of the previous day, with a fair lot of rain in the morning, very windy, and very cool for the time of year. I therefore decided to stay at the Centre and explore its grounds and surrounds as soon as the rain abated.

The gardens of the Centre and its adjoining flowery woodland margins (SH 656 406) were investigated first. These included Douglas Fir (*Pseudotsuga menziesii*) [again: labelled as such]. The gardens were quite pleasant and flower-rich and yielded a few semi-interesting invertebrates.

At the request of Dawn Painter, I removed various invertebrates from the Malaise trap which was erected on the lawn outside

our laboratory at the Centre (*I set that up - ed*). I also removed invertebrates from the Malaise trap on a few occasions over the days that followed.

The woodland that I walked on the previous day was worthy of further investigation, so I walked it again, but today, I walked much more extensively, and walked upwards until I had reached the open, recently-felled plateau above the woodland.

Monday 12th June

At the start of the week, Dawn Painter had asked if she could accompany me on one of the days, so we travelled together to four sites today. The weather was a mixture of all sorts, but generally windy and cool.

Wet grassland and marsh adjacent to saltmarsh west of Tŷ'r-bont (SH 626 384) on 12.06.2017

Our plan was to travel to the dunes at Morfa Harlech (SH 570 316), which was our eventual destination, but we visited three other places of obvious wildlife value whilst on the way to Morfa Harlech. Firstly, we investigated an interesting sheltered area of wet grassland, marsh and saltmarsh centred on SH 626 384, for which I could find no appropriate place name, therefore, I have reluctantly referred to it as 'west of Tŷ'r-bont'.

We then went to the coastal grassland at Glastraeth (SH 608 363), which was heavily grazed by sheep, so not very interesting entomologically. The next place we visited was also grazed by sheep, but only a few, so the vegetation was quite lush, and the locality was of interest to the entomologist. This was a marshy field and rocky slope beside a dilapidated old farm outbuilding near Glan-Y-Wern (SH 607 352).

Tuesday 13th June

I travelled to Morfa Harlech, and spent the entire day there, although this was not my original intention. My decision to stay at Morfa Harlech was influenced by the weather, which was initially grim, cloudy, cool and windy; but then became sunny and humid; hence, there was an increase in invertebrate activity, and plenty to interest me for the remainder of the day. I deliberately investigated a different part of the dune system from the part looked at on the previous day. This was centred on SH 572 314.

Wednesday 14th June

Today was mainly hot and sunny with a moderate breeze, but I failed to make the most of the weather-conditions, as I wasted a lot of time driving. Firstly, I went to Talsarnau Station (SH 609 361), then revisited two of the localities visited on the Monday, viz. those at SH 607 352 and SH 626 384. If I'd had any sense, I would then have made the relatively short journey to Morfa Dyffryn; but instead, I chose to make the long journey to the northern end of Cors Geirch (SH 308 382) which was quite an unproductive site on the day, and difficult terrain to walk. On the journey back, I visited two areas, the first being near Boduan (SH 30314 38929) which was part of the same Cors Geirch bog complex, and the second being a very interesting hilly area with rocky outcrops at Pentrefelin (SH 522 390).

Thursday 15th June

Today was very disappointing weather-wise. I firstly visited the Gwaith Powdwr site at SH 621 389. The weather whilst I was there was half sunny, half cloudy, but with a very strong cool breeze. I then travelled to the dunes at Morfa Dyffryn (SH 579 227) which was a very unpleasant experience as I was constantly sand-blasted by sand which was being whipped-up by strong cool swirling winds. There were virtually no sheltered areas on the dunes, and the sand was falling from the sky like fine rain.

Friday 16th June

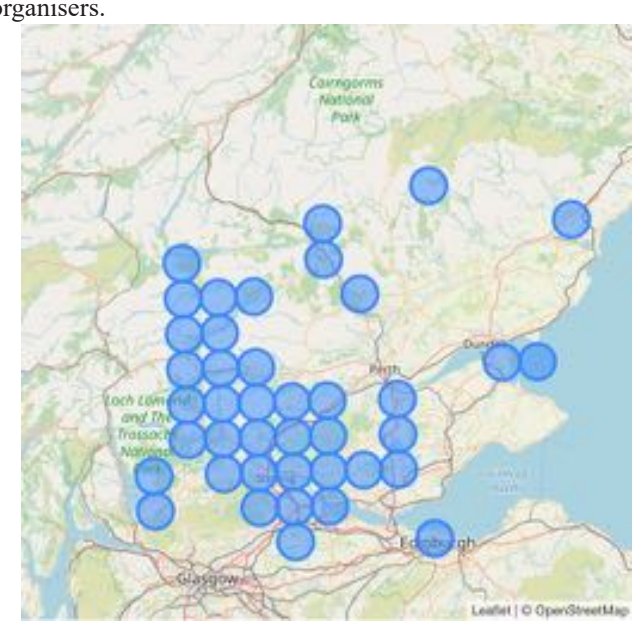
Before making my return journey home to Beadlam, I returned to the dunes at Morfa Dyffryn, but investigated a different area of dunes (SH 572 225) from that visited the day before. The weather was dull and cool with a moderate cool wind, so not great for entomology, and I didn't spend long there before continuing on my way.

Andrew Grayson

Andrew submitted a spreadsheet of his records which are to be found within the dataset on the NBN Atlas.

Stirling 2019

Twenty four Dipterists ventured north to Stirling from across the UK, with local Dipterists joining us for some or all of the week. Despite the workroom being put out of action on the second day due to flooding (see Alan's report of the meeting in Bulletin 88), the week was very productive. In a rash moment, I offered to collate the records from attendees at this meeting. During the winter spreadsheets containing large numbers of records started to arrive in my email inbox. These records were collated into a single spreadsheet, grid references and species names were checked, and corrected where necessary, and then the whole dataset was uploaded to iRecord via the Stirling Field Meeting Activity. Some additional records were uploaded directly by individual recorders or recording scheme organisers.



An advantage of the iRecord system is that once uploaded the records become immediately available to national recording schemes and to local environmental records centres. Some, but not all recording schemes automatically share records with the NBN Atlas, while the BRC sends a set of unverified records to NBN Atlas for those Diptera families that are not covered by a recording scheme. To date, around 43% of the records have been shared via NBN Atlas. **We plan to extract the field meeting records from iRecord and send to NBN as a separate DF dataset to guarantee that all records reach NBN Atlas**.

The dataset currently contains over 5000 Diptera records. Dolichopodidae and Craneflies top the list of families, with good numbers of Fungus Gnats also recorded. In addition, there are just over 1000 records from other orders; about half of these are sawflies and Andrew Halstead was kept extremely busy identifying our submissions for the Honeypot Challenge. The records are spread across a wide geographical area (see map), with Dipterists visiting 41 different 10km squares distributed within four 100km squares and seven vice-counties. Data has now been sent to the landowners and managers who gave us permissions to visit their sites. I'd like to thank everyone for contributing records and Martin Harvey for his assistance with iRecord.

Jane Hewitt

Acknowledgements

So many people are involved in working to ensure that Diptera records are collected from our field meetings and turned into open data for all to use that it's hard to single out who to thank. Mike Howe and Laurence Clemons carried out the bulk of the collation work for three of the field weeks listed above and both were closely involved with organising the actual trips. Dipterists Forum members who attended these expeditions contributed such a lot of information, collecting specimens by day and beavering away over microscopes in the evening to identify and record. Jane Hewitt is now data-wrangling using iRecord backed up by Martin Harvey and NBN's Sophia Ratcliffe courteously processed all the files I sent her for upload to the Atlas.

Finally Andrew Grayson's account gives a flavour of the kind of enjoyment to be had on our field weeks.

Take a look now at the usage figures from those datasets on Dipterists Forum page at https://registry.nbnatlas.org/public/show/dp172 Those figures drift in gradually as the records begin to play their part in enquiries for conservation, research, education or just plain curiosity. A FAIR achievement by all.

Do join us on our next field week, they're great fun too.

Darwyn Sumner

Worried about duplicate records?

Don't be. This happens a lot. County Recorders and surveyors submitting to both their LERC and to a Recording Scheme are prime examples. Paula Lightfoot in her presentation to us way back in 2014 was very reassuring that the NBN systems could cope well with them. When it comes to Recording Schemes many of them will use spreadsheets when they are doing an analysis and they've got the "Filter for unique values or remove duplicate values" commands. For those making maps it doesn't matter, you just get two identical dots on top of one another.

Cornwall 2021

Account: See Reports in this issue

Records: See https://dipterists.org.uk/field-meetings

Photographs: iNaturalist project at https://www.inaturalist.org/projects/cornwall-dipterists-forum-field-week **OR** https://tinyurl.com/kt6n6jpd

Recording Projects

Project to digitise Steve Falk's Records

Following the item "Fly data-sharing schedule" in Bulletin 91 (page 11, part 4), BRC's David Roy and Martin Harvey have been in contact with us this June regarding the project to digitise Steve Falk's records.

As initiator, with Steve, and manager of this digitisation project (Bulletin 80, p5, 2015) I was as keen as any Recording Scheme to extract the records. Mysteriously two Schemes beat us to it, Tachinidae (Matt Smith) and Sarcophagidae (Daniel Whitmore.) It's not clear why they got copies well ahead of the organisers from 6 years ago. I got my first sight of the scans of Steve's 13 notebooks on 15th June this year, thanks to Martin Harvey. Steve's files had previously been worked on by Hymenopterists in a separate project and by BRC's Val Burton (this project) before she retired.

Correspondence

- **David Roy:** Apologies for not replying to you directly before now. Martin and I have discussed options on a few occasions and Martin has given updates to the DF committee.

  To confirm the current situation, BRC took on the task of digitising Steve's notebooks in good faith but we've been unable to complete the work since Val Burton retired. We under-estimated the complexity of the task and have no feasible way of digitising all the notebooks. We will continue to facilitate access to data that has been digitised and to the pdf of the scanned notebooks.

  BRC are hugely appreciative of the enthusiasm and knowledge of the volunteer recording community and we will continue to support Dipterist Forum and National Recording Schemes as much as we are able
- **Darwyn Sumner**: We've a very strong team of expertise in Dipterists Forum, particularly across all our Recording Schemes and with care could organise a means of splitting and allocating the Diptera work so that extracting records could become feasible.
- **Martin Harvey**: I think the approach you suggest, of splitting and sharing the digitisation, would be a good thing to do. It has already been happening for the Tachinidae (I think Matt Smith has more or less completed the extraction of those records) and Sarcophagidae (Daniel Whitmore has a copy of the scans but I don't know if he has yet started extracting records). We may need to think about how to ensure the records become more widely available once the various sections have been dealt with
- **Steve Falk**: I think Martin's suggestion is the way forward. A high proportion of my current data is getting to iRecord but I don't know if I'll ever get time to digitise the older data. Nigel Jones recently extracted the sarcophagid data and I've cc'd him in because he may have a useful perspective. It is quite good to do it this way, as it often generates queries from recording schemes/data extractors that can be resolved more easily e.g. nomenclatural confusion or unusual records that need checking … I'm happy for scans to be sent to all relevant parties

Consequently this is now a Dipterists Forum project managed by the team which initiated it. The scans are available to all and the methodology is outlined below. We would be grateful if those interested would adhere to that system. We've done half the work after all.

Your enquiries should be answered in the Guide at https://micropezids.myspecies.info/node/307 which we're happy to amend if you have any improvements to make.

Any progress you make or dibs you want to register for a non-Recording Scheme group should be made on the Dipterists Forum Forum (put Steve's name in the title of the post please so that we don't miss them)

It's FAIR to share

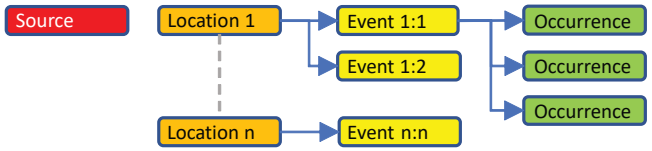
Think you know or want to learn some Diptera?

Have a try at this Crowdsourcing Project

The Cunning Plan

Though it seems a huge task to digitise ~200,000 records from handwritten notes, this task is entirely feasible if broken down into manageable components and approached in a logical manner.

The job divides into two parts. the first part involves half the model, extracting the locations and events from each of the folders into spreadsheets according to the following:



Darwin Core (DwC) spreadsheet model, each coloured component a 'sheet' and each box an entry in a 'row'

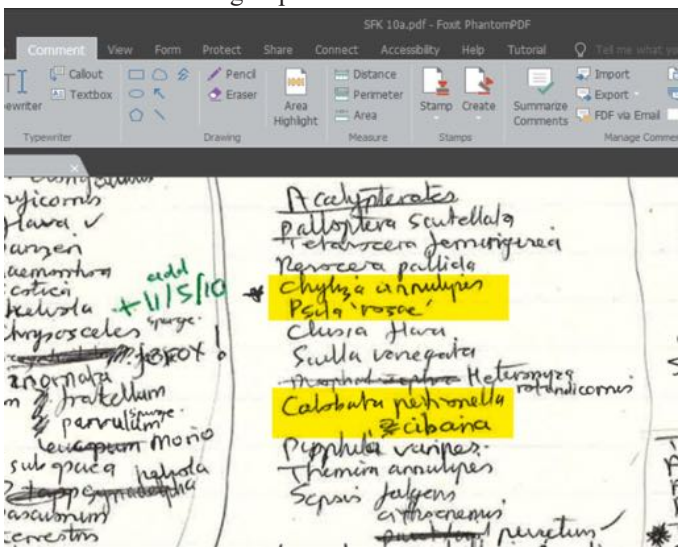
That part has been completed, no need for anyone else to type out dates, location names and grid references. Each Event also references the page number of the appropriate pdf. You'll find the necessary files at https://micropezids.myspecies.info/node/307# along with a **Guide** to help extract the species Occurrences.

The remaining part of the job, getting records out of those pdfs (the yellow to green links in the above diagram), involves volunteers with some degree of taxonomic familiarity, folk in some way associated with the Recording Schemes or at least approved by them to do the job. The task for these is to work through the pdf folders looking for records of relevance and linking them to the Events in the DwC spreadsheet. The pdf page numbers assist with this task which can be carried out by many groups **simultaneously**.

Crowdsourcing & Volunteers

We're looking for two kinds of volunteers.

Spotters: folk with an interest in a group and keen to help out a Recording Scheme. To do this will require a pdf editor capable of area highlighting or box drawing (see Guide.) All you have to do is open one of the pdfs, work through it highlighting taxa of relevance then send it (saved & renamed) to the verifier of that group.



Can your pdf editor do this? And save it to show others?

Icecream PDF Editor can, the **free** version just puts a watermark on each page of a saved copy. Full version is £40. See Review.

You'll have to get the OK from the Recording Scheme first so that they know what you're about. Opportunities known at the moment are:

- Sciomyzidae [DS - completed]
- Conopidae [Dave Clements]
- Sepsidae [Steve Crellin]
- Lonchaeidae [Iain McGowan]
- Oestridae [DS & Andrew Grayson] - I've seen one or two in the pdfs. Changing highlight colour in some pdf editors can be a pain but it's worth it to flag the occasional one of these.
- Non-Recording Scheme groups, e.g. Bibionidae [DS + Forum] - tell us you're doing it though, best place to do that is on the Dipterists Forum Forum then everyone knows you've got dibs.

You'll need some familiarity with the group you've chosen and a fair grip of the pre-millenial taxon names.

Verifiers are the second kind of volunteer. Some expertise is required so these will mostly consist of Recording Scheme organisers and their acolytes. Working closely with them is a great way to pursue an interest in a Family that piques your interest; you will learn something. This group will work with the DwC spreadsheets (see Guide) and get datasets uploaded to NBN Atlas.

Some Recording Schemes have done or prefer doing it all themselves (e.g. Micropezids & Tanypezids, Tephritids) having forged ahead since July. So don't be surprised if your offer of help is politely refused.

It's too early for me to have quizzed them all but I hope they'll contact me with their stories in time for the next Bulletin

How hard can it be? Is it worth the effort?

I extracted all the Micropezid & Tanypezid records during the course of preparing the DwC spreadsheets with all their Locations, Events and page numbers so it's hard to estimate how long it would take just to extract records for a similar-sized Scheme. I had the whole thing done within a month (less my week in Cornwall) of receiving the pdfs however so it wouldn't be a huge task for, say, the Sepsidae. For example it took me around a day to process 499 Sciomyzidae records from one 225 page folder. A nice leisurely job for the winter months.

They are an important addition, at least for the smaller Schemes. They'll have been consulted in their paper form in the past to develop significant books and reports. The M&T Scheme's NBN Atlas dataset, currently amounting to 4083 records will shortly get an increase of 20% (772 records.) Significant enough for me to return to the drawing board, to redo all those distribution maps and phenology diagrams.

Sure it will take years to extract all 200,000 but the material and methodology are available now to anyone who cares to have a stab. Join Steve on his sunny expeditions when it's snowing in real life and do let us know how you get on.

https://micropezids.myspecies.info/node/307#

Project manager: Darwyn Sumner

Collections of your own?

If you've a personal collection recorded only on handwritten sheets then this system will work for you too. It's also designed to work on material from abroad. Now's perhaps the time to scan your paper records and figure out your international checklist.

***"scientists around the world have been searching for other long-term data sets, data from forgotten studies languishing unpublished in notebooks or old Excel files."* Goulson, 2021**

Techniques

Equipment

Kikkerland Pocket Pruner Multi Tool

For those of us who have the need to keep our regular paths free of bramble or to trim vegetation to get a good photograph, these are invaluable.

You may have to hunt around for a UK supplier, oddly I found mine in a Waterstones bookshop in Chester (their last one).

Be sure to follow the law about knives, multitools are frequently taken and finish up on police auction sites.

Chambers for live photography

Stretch a piece of clingfilm across the top of a suitable container and you've got an optically good film which will allow you to photograph a fly constrained in a pot.

There are two major disadvantages to this technique. Firstly, because of the depth of the pot, the fly can run up and down the sides. Secondly, the film is tricky to apply over an open pot containing a fly determined to escape.

Some kind of piston mechanism seemed to offer a solution to the first problem. A syringe plunger perhaps - if only one could find a plastic syringe with a wide diameter. Push the plunger up and the fly becomes confined to the very top, just under the film. I had no luck finding anything like that but what I did discover in my searches was a gadget that Beekeepers use to to mark queens:

"**Queen Bee Catching Marking Cage**" from Heather Bell Honey Bees, Beekeeping Supplies. (https://cornishhoney.co.uk/)

I ordered 3 for £20.55 (inc. postage)

I was immediately struck by the cap-closure mechanism, a flexible strip which slides across the opening just below the top. The slot sizes in the strip allow insects smaller than a bee queen to get out but with a little care we can close those gaps with a film. Once this is done you've a gadget which at the very least will augment the means by which you can retrieve live undamaged specimens from a sweep net (more usually either by pooting or tubing.) Something which may prove handy in the field - though I suspect it will get damaged if ethyl acetate gets near it.

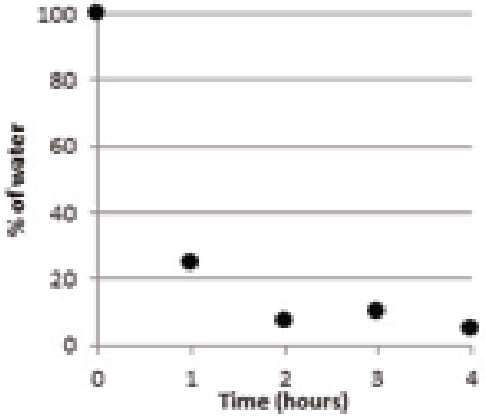
The foam plug can be replaced with many subtances, oasis will soak up water from wet specimens as will silica desiccant. A disc of plastazote to replace the foam will provide a firmer base onto which could be added some thin card as a photographic background, with leaves or other natural material to safely restrict the fly's movement.

The size of the slots is problematic, many flies can escape eventually, you'll just have to be quicker.

Darwyn Sumner

Vacuum freeze-drying adult flies for distortion-free specimens

For many decades I have stored my season's samples in the kitchen freezer for identification later in the year. If only a few specimens are kept in a tube and are left too long, they dry out as the water sublimes, but the resulting specimens are in nice condition apart from being brittle and not suitable for pinning. This year, in order to get attractive pinned specimens for photographing, I looked into how to make use of this method but without having to wait for months for the specimens to dry. Woodring & Blum (1963) seem to be the first to apply the well established process of freeze-drying to invertebrates, and Harris (1965) used it on a wide range of vertebrates and invertebrates at the Natural History Museum, London.



Decrease in water content of flies over time while vacuum freeze-drying

The rate of sublimation can be increased by lowering the air pressure but then the water has to be trapped and removed so that its vapour pressure remains low, allowing more to sublime. In commercial freeze-drying, say for dried food, a vast quantity of water vapour must be trapped and, to remove more water, the vapour-pressure gradient between the food and the water trap is increased by very slightly warming the food. So it's all a bit too fiddly for the DIY enthusiast to make. Commercial equipment is pricey – a second-hand small lab-top model will cost several thousand pounds. Perhaps all I needed was low pressure without the vapour trap since the amount of water in my tiny insects is negligible. Luck was with me when I rang the first firm for help as its director is the very man, John Licence, who supplied Richard Harris at the NHM (just mentioned) with his vacuum pump, and advised on the experiments way back in the 1960s when I was still at school. So instead of sounding like I was doing something daft, I received a very positive and enthusiastic response. The upshot is that I now own a small vacuum chamber (a metal pot with inlet and outlet taps) and a vacuum pump that gets to infinity and beyond (about 0.01 millibar). I drilled a hole in the side of my spare freezer for the pipeline between the pump and the chamber.

The gear: pump and chamber in the freezer.

My first test used *Poecilobothrus nobilitatus* (Dolichopodidae) which were superabundant in 2020. On an old laboratory balance that I'd bought from my physics department when I left school, I weighed the flies fresh, put five in the chamber, left the chamber to get well frozen (about -25°C) and then switched on the pump for 5 hours. I had no idea how long it would take but the pump got hot so I didn't want to leave it running overnight but left the taps closed on the chamber so it should have stayed at the same low pressure until the next morning. The other half of the sample was left to air-dry during a warm night. They were reweighed, then all put in a tub with newly reactivated silica gel for 18 hours to get a water-free weight. Freeze-drying removed 97.5% of the water compared to 95% for air-drying (which incidentally, for air-drying, was far quicker than I had expected). The next step was to see how long drying took. Procrastination on my part meant that I had to find other species since Poecilobothrus had died out by the end of August, so I collected a miscellany of dolichopodids, all rather smaller than Poecilobothrus and consequently getting near the limit of accuracy of my balance. This time, I weighed 20 flies, divided them into batches of five, and every hour removed a batch from the chamber for re-weighing, and again after a day in the silica gel tub. As Fig. 1 shows, their weights more-or-less reached a plateau after 2 hours, having lost about 90% of the extractable water. Small differences between batches were almost certainly due to error at the bottom end of my balance's sensitivity, and perhaps because the flies were a mix of sizes and species. The flies left for just 1 hour had noticeably poorer appearance than the remainder, for example their abdomens had bent, so bringing them back to room temperature before they had dried properly allowed the cuticle to collapse as more water was lost. Those dried for 2 hours or more were near-perfect and far superior to air-dried specimens. Intersegmental membranes remained life-like rather than shrinking so there was no telescoping of segments, such as the tergites or the head onto the thorax, and no buckling – for instance, the femora retained their true cross-section. The eyes were the only disappointment as they sometimes wrinkled very slightly and usually lost their beautiful green iridescence. Interestingly, John Licence had predicted this as Richard Harris had had to use artificial eyes on his NHM material.

My method is basic. Everything written about vacuum-freeze drying says that you need to capture the water vapour, both to get rid of it so the water continues to sublime, and to stop the pump oil deteriorating and eventually ruining the pump. For my flies, removing the water is unnecessary. John thought that, for the tiny quantities of water that I was sucking into the pump, the oil would last many years before it needed changing.

I wish I'd discovered this kit many years ago. But you do need a bit of spare cash – the pump (second-hand) and chamber cost several hundred pounds, and not everyone has a spare freezer. Less expensive pumps get to about 2-3 millibar, which is insufficient as 0.5mbar seems to be the upper limit that several papers quote. You probably don't need to get far below freezing as the point of freezing the beast is to keep it's shape, so any cheap freezer will do. For little flies, drying time is far quicker than given in the literature, for instance Schauff (1986) say that it will take 48 hours for a caterpillar to loose 90% of its water. A note of warning – on one occasion, my chamber leaked when the steel rim rusted slightly, so the seal with the lid was not perfect. Lots of air, not necessarily below freezing, got sucked through the system and may have thawed the specimens. This batch were not as perfect as previous ones.

An alternative is critical point drying (CPD), which I won't attempt to describe, but is even further beyond the pocket of amateur entomologists and I don't think there are easy short-cuts as I have taken with vacuum freeze-drying. I also note that Dan Bickel (2009) does not like CPD as he says that it often expands, inflates or bursts specimens. So, if you want beautiful specimens, buy a pump and vacuum chamber with those savings before they become worthless.

Acknowledgements.
I am most grateful to John Licence for his considerable help.

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C. Martin Drake

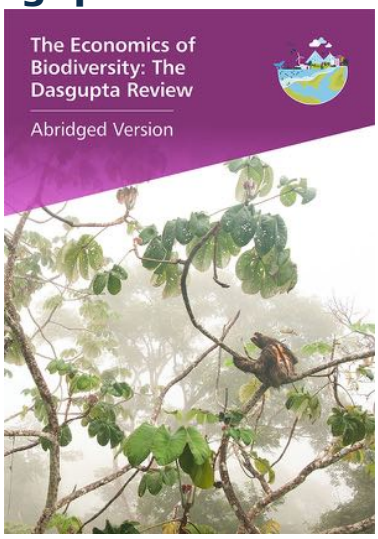
Conservation

Conservation News

No man is an island,
Entire of itself.
Each is a piece of the continent,
A part of the main.
If a clod be washed away by the sea,
Europe is the less.
As well as if a promontory were.
As well as if a manor of thine own
Or of thine friend's were.
Each man's death diminishes me,
For I am involved in mankind.
Therefore, send not to know
For whom the bell tolls,
It tolls for thee.

John Donne

The Dasgupta Review



"*Humanity now faces a choice: we can continue down a path where our demands on Nature far exceed its capacity to meet them on a sustainable basis; or we can take a different path, one where our engagements with Nature are not only sustainable but also enhance our collective well-being and that of our descendants.*" Dasgupta Review (p 69)

The long-awaited 600-page **Dasgupta Review The Economics of Biodiversity** was published on 2nd February 2021. An abridged 100-page version and a 10-page Headline Messages document can be downloaded from the government website. There is a Foreword by David Attenborough. The Review is illustrated with many clear and well-deployed figures, closely tied to the text. The page numbers mentioned below refer to the abridged version.

Reading through the abridged version, I was struck by the nature of the vocabulary used, which is very different from the grim GDP-based mantras of governments. For example, Section 25 at the end of the review is titled **Nature's intrinsic worth: sacredness**. The emphasis is on stewardship and contrasts sharply with current thoughtless, largely untrammeled exploitation. The review does not pull any punches and is uncompromising in its tone (as one would wish it to be). Throughout there is a sense of urgency and the need to act collectively, both nationally and internationally. This collective action must involve statutory commitments to sustainable goals that will be enforceable, while not penalizing the disadvantaged.

The Review has two main parts: (1) The state we are in and why, and (2) The road ahead.

Part I The state we are in and why identifies the problems and how they have arisen; provides the technical background to economic theory and practice that is needed to understand how we address the problems; places Nature in the context of global economics. This part is heavy on definitions and technical, but the key ideas such as types of capital and "accounting prices" (defined in Section 5) are explained clearly. "Accounting prices" are linked to well-being under the inclusive-wealth model by using them to value capital goods that includes Natural Capital.

Dasgupta highlights a misguided economic model of economic progress that is based upon GDP. In short, the GDP model should be abandoned in favour of a much more comprehensive and nuanced set of measures of "success" and "progress" at the centre of which is a Nature-based concept "**Natural Capital**". In Chapter 17 he introduces the concept of "**Inclusive wealth**", comprising Produced Capital (machines, tools, buildings, infrastructure), Human Capital (education, skills, health, knowledge) … and Natural Capital (biosphere, geosphere). It is "inclusive" in that the interdependency of these three is recognized as being integral. A key economic feature of the inclusive-wealth model is that of "well-being" across the generations – very different from short-term *carpe diem* economics.

In **Part II The road ahead** the required changes to our current socio-economic model and how these could be achieved

are discussed. The changes as summarized on p 69 of the Review are:-

1. Ensure that our demands on Nature do not exceed its supply, and that we increase Nature's supply relative to its current level;
2. Change our measures of economic success to help guide us on a more sustainable path;
3. Transform our institutions and systems – in particular our finance and education systems – to enable these changes and sustain them for future generations.

All three requirements are challenging. Crucially, governments, institutions and individuals will have to rethink what "success" means for themselves and for society, both nationally and globally. The current objective of unending growth as defined by an untenable GDP-based model is shown by Dasgupta (among many economists) to be fundamentally flawed and unrealistic – yet we persist with it, sleepwalking to a desolate future. The importance of effective legislation to regulate and enforce is a recurrent theme in the Review.

Part II, Section 19.1 Conservation and Restoration of Ecosystems provides an interesting assessment of the needs and merits of conservation. Perhaps the single most important statement from a conservation perspective is that Dasgupta explains that it is less costly to conserve Nature than to restore it. On page 71 it states that "More investment in Protected Areas is needed. The funds required are small. It has been estimated that to protect 30% of the world's land and ocean and managing the areas effectively by 2030 would require an average investment of US$140 billion annually, equivalent to only 0.16% of global GDP…"

While advocating conservation over restoration (prevention is better than cure), Dasgupta recognizes that habitat restoration (e.g. rewilding, rewetting, sympathetic habitat management) allows important gains in biodiversity that should be supported by legislation and funding.

Dasgupta makes the interesting point (p 71) that "*Uncertainty in our knowledge of ecosystem tipping points, the irreversibility of ecosystem processes, and imperfections in verifying one another's activities, when taken together, mean that quantity restrictions (e.g. on extraction or pollution) may be a better instrument than taxation.*" This approach is consistent with his philosophical position that conservation (degradation prevention) is preferable to restoration (cure). His ideas extend well beyond "polluter pays" and may find favour with governments averse to using taxation to pay for restoration.

The Review should provide some encouragement to conservation organizations and societies that their work will be increasingly valued and better funded – as a priority. The current parlous state of the UK's statutory body, a rather toothless NE, needs to be transformed into something like Max Nicholson's Nature Conservancy – a voice that is heard by government … and supported by legislation.

Whether or not individuals, institutions and governments have the collective will to embrace this urgent call-to-arms remains to be seen. Dasgupta makes it clearer than ever before that we are, both individually and collectively, the authors of our own fate.

Mark Welch

Biodiversity Net Gain (BNG) – Where is it going in the UK ?

This year is a big one for biodiversity – the Glasgow COP26 Earth Climate conference, the UK Environmental Bill and the publication of the Dasgupta Review The Economics of Biodiversity (see the separate item in Conservation News). Here, we provide a brief critique of a key component of the UK government's Environment Bill currently working its way through parliament – the "Biodiversity Net Gain" policy.

"Farcical"

The rationale behind the UK's strategy of BNG is that where a habitat will be degraded or lost by development or infrastructural projects, the developer must provide funds for creating an equivalent habitat as close as possible to the original site (no loss or a net gain) or, alternatively, a habitat with at least 10% gain at a locality elsewhere. A coherent, meaningful BNG policy underpins the efficacy of the Environmental Bill soon to be debated in Parliament.

At the core of the current NE/DEFRA BNG policy is the Biodiversity Metric 3.0 calculator which is used to calculate a habitat score for a site. This metric is discussed below. Documents and the calculator itself can be downloaded from the government website at https://tinyurl.com/49rh4fep

What NE/DEFRA consider "biodiversity" to be is unclear from the documentation accompanying Metric 3.0. ***What is clear, however, is that the metric does not adequately consider the needs of the 27,000+ species of insects (and 12,000+ species of other arthropods) that form a major part of UK biodiversity***. The 7,000+ fly species are a significant component (around 15%) of UK biodiversity, and so Dipterists Forum has a voice in these issues. JW and MW have contributed to and signed a 6-page letter to CIEEM (https://cieem.net/), coordinated by ecologist Richard Wilson, that details the shortcomings and serious dangers of using Metric 3.0 (see below). Other signatories include Steven Falk and Prof Kathy Willis (Oxford).

How is "biodiversity" measured by NE/DEFRA ?

Underpinning the BNG process is the calculation of the biodiversity value of a site. This is currently done by NE/DEFRA's Metric 3.0 calculator (an Excel-based spreadsheet). There is an emerging consensus among academics and professional ecologists who have used it that Metric 3.0 is a crude tool that is not fit for purpose, primarily because it is too qualitative, too broad in its habitat designations and is not sufficiently granular, so that there is much ambiguity and lack of precision in habitat evaluation/scoring.

It is pretty clear that the motivation for the "basic" nature of the calculator is to make it easy for developers, ecologists and landowners to use and/or understand. The supposed ease of use comes at an enormous expense in that the BNG policy, as it now stands, is considered by many to have a potentially seriously negative impact upon biodiversity. Furthermore, the experience of ecologists using 3.0 is that it is not easy to use because it is fundamentally flawed, as we discuss below.

***"The house is burning. We do not need a thermometer. We need a fire hose."* Janzen in Goulson, 2021**

Objections to the current BNG strategy are many. One of the most contentious features of Metric 3.0 is to be found in the Condition Assessment sheets in the Technical Supplement document downloadable from the same page (at https://tinyurl.com/49rh4fep) which indicate the criteria for habitat value assignment. If you read the Condition Assessment section (from page 147 onwards), I guarantee that your jaw will drop.

As an obvious example, take grasslands. Floral indicators of (perceived) low-quality, low-value habitat such as "scrub" and sites with abundant ragwort and umbellifers, lead *de facto* to an assessment of low value. This assessment appears to be based upon the perception that because these plants are harmful to livestock then they must also be of general low biodiversity value. As is well known by naturalists and biologists, these plants are very important resources for a wide range of pollinating invertebrates, not least Diptera. What is needed in the Condition Assessment for each habitat type (in addition to more habitat types) is an index of "floweriness" that is relevant to that habitat. At present, floweriness in all its manifestations (including ragwort and umbellifers) is poorly represented. The botanical criteria used for Condition Assessment are more aligned to the Injurious Weeds Act than England's National Pollinator Strategy. Even the sequence of blossoming trees in spring (cherries, willows/sallow) is not considered as part of evaluation, despite its significance for pollinators. Similarly, Ivy in the autumn. Temporal aspects of a habitat are not catered for.

fundamentally flawed

The metric strips down a habitat to an unrecognizable **preposterous skeleton** and lacks any real appreciation of the spatial complexity of habitat mosaics and microhabitats. In short, it lacks any recognition (knowledge ?) of invertebrate ecology.

seriously negative impact upon biodiversity

One timely and surprising chink of light was a recent BBC news item I saw reporting that the Royal Horticultural Society had awarded first prize to a garden of weeds (including plenty of ragwort): "Weed garden wins RHS gold at Tatton Park flower show" (BBC News 28/07/2021). I hope that this sets a precedent. MW's small, untidy clover-, ragwort- and bramble-ridden garden in Ely must be worthy of an award !

Back to the metric …. Having scored the habitat, the next stage – which is optional – is to score the "ecosystems services" benefits of a habitat. This is achieved by using the "Environmental Benefits from Nature" (EBN) tool, which is a "voluntary decision support tool". Willis points out that the ecosystem services cannot be calculated for a block of habitat without taking into account the wider geological, hydrological and pedological context of the site. It is meaningless to calculate the ecosystems services for a site without considering external contributory factors, e.g. the drainage catchment and run-off in which a block of habitat lies. The point about the wider context of a site is clearly also relevant to considerations of offsetting, i.e. the choice of suitable alternative sites for habitat creation/restoration.

In addition to the grave shortcomings of the Conditions Assessment criteria, there is the question of how one obtains a representative sample of a site's biodiversity. Theoretically, the complete biotic community of a site should be considered. However, from a practical viewpoint this cannot, of course, be achieved, but a meaningful representative cross-section of the communities should be sought. This is not currently required by the Biodiversity Metric 3.0. No indication of what a suitable taxonomic cross-section for a survey should look like is given, so site ecologists are left with little or no guidance about, for example, how to assemble a representative species list.

Perhaps the most **farcical** aspect of the current BNG approach is the concept of "habitat banking" by which today's biodiversity losses will be "banked" for recovery sometime in the future - a future that, under the current approach, will likely be **seriously depleted in biodiversity, possibly irrecoverably so**.

The consensus among ecologists, academic and field, is that there needs to be a much more nuanced and granular calculation than Metric 3.0 to represent biodiversity and habitat value vis-à-vis meaningful, contextualized "Condition Assessment" criteria. Only then can secondary considerations such as ecosystems services be evaluated. This is likely to involve a more complex calculation; but then life is complex and, surely, it should not be simplified beyond recognition for the convenience of developers, landowners and government decision-makers.

It is to be hoped that ecologists will embrace a more sophisticated metric, as it will reflect a more recognizable picture of habitat complexity and biotic interactions than does Metric 3.0. Developers, landowners and government officials may, however, see this as an unnecessary impediment to their decision-making – muddying the waters. Occam's Razor? Well maybe, but you first must know what "necessity" is.

The urgent need to quantify biodiversity meaningfully within the context of the UK Biodiversity strategy was highlighted by the recent House of Commons Environmental Audit Committee report (June 2021) https://tinyurl.com/p8uvs896 Striking the right balance between thoroughness and utility is key.

As mentioned above, Flies are a major part of UK biodiversity, and we dipterists think that they are valuable and fascinating in their own right. However, to ensure that they are given due profile and consideration in future BNG assessments, perhaps DF should consider preparing a document addressing the BNG issue, indicating how flies provide key evidence of habitat health and quality, and how they contribute to ecosystem-engineering and ecosystem services.

Dr Mark Welch,

Dr Judith Webb BEM

Further reading

Prof Kathy Willis (Professor of Biodiversity, University of Oxford): Net biodiversity gain: gain for whom ? https://tinyurl.com/tfkcwapx

Strange, N., Baker, J., Griffiths, R. A., Struebig, M. J., & Bull, J. W. (2019). The ecological outcomes of biodiversity offsets under " no net loss " policies : A global review. Conservation Letters, (April), 1–17. https://doi.org/10.1111/conl.12664

Biodiversity 3.0 metric launched in new sustainable development toolkit https://tinyurl.com/khumjupm

Saproxylic pollinators

Steven Falk has written a 144-page review of saproxylic pollinators that was commissioned by The Woodland Trust. It was published in April this year and can be downloaded at https://tinyurl.com/3xns93yx

The review covers three insect orders: Coleoptera (22 families), Diptera (16 families) and aculeate Hymenoptera (7 families). Saproxylic Lepidoptera (i.e. moths) are not included as there is very little information on flower-visiting due to most species being nocturnal. Unsurprisingly, the list is dominated by species exploiting broad-leaved woodland. Detailed accounts are given for each species along the lines of those of recent NECR species-status reports.

The definition of saproxylic insects that Steven uses is: "*... insects that rely heavily on dead wood or tree wounds to complete their life-cycle*". As such, the life-styles range from stages feeding on heartwood rot and sap runs, to fungivores, predators and scavengers. The review contains a lot of valuable detailed information about microhabitats and recommendations on how sites should be managed to preserve them. Floral resources used by adult saproxylics are given a thorough treatment, again within the context of habitat management.

Of the 86 species of saproxylic fly considered in the review 16 are muscids and 38 are syrphids, together constituting 63%. However, there are some notable absences. For example, saproxylic Mycetophilidae ("potentially dozens of species") are excluded from the review "because of the poor state of knowledge of these insects". Seven cleptoparasitic sarcophagids are included, as they parasitize wasps and bees nesting in decaying wood. Over half the fly species (44/86) have conservation status that ranges from CR (*Blera fallax*) to NS. Most of the muscids have conservation status, and eleven of the sixteen species are of the genus *Phaonia*.

Where the larval development site is specified (49 cases), 17 species use rot-holes and 11 use sap runs; a few use both. No information is given about larval development sites for 43% of the species listed, suggesting that targeted studies of larval sites and requirements for these species would be very worthwhile. There is clearly scope for improving our knowledge of the life histories of saproxylic flies.

There is an extensive bibliography covering the three insect orders that is a useful door into tracking down key references and studies. Steven's review is another milestone along the way towards promoting best practice in managing habitat for the conservation of invertebrates in the UK and beyond.

Mark Welch

DF responses to consultations on WCAQQR7 and Swanscombe SSSI

WCAQQR7 As part of the stakeholder consultation process relating to the latest (7th) quinquennial review of the Wildlife and Countryside Act 1981, the DF committee (12/06/21) discussed whether the society should advocate Schedule 5 listing of any fly. At first glance, it would seem that seeking protection is an obvious goal. However, as the legislation stands, giving Schedule 5 protection to a species (its sites) would likely impose considerable restrictions upon the activities of specialists studying other aspects of the fauna and flora of such a site. Such specialists, of which DF has many, are the bedrock of biological recording in the UK and so any legislation imposing serious constraints on their recording activities could have a major impact on the coverage (spatial and temporal), number and quality of future records, in effect weakening databases. Alarmingly, JNCC is recommending that all Critically Endangered species be put forward for protection under this schedule. Therefore, the DF committee decided that the society should not support the listing of any fly species under Schedule 5. Our concerns regarding the JNCC proposal were made clear in the letter I wrote to the relevant QQR agencies - JNCC, NatureScot, Natural Resources Wales, Natural England. I also sent a copy to Buglife, who are also involved in consultations regarding WCAQQR7; Matt Shardlow was grateful to have the DF perspective, which would be mentioned at future meetings.

Swanscombe SSSI Buglife have been seeking support for making a case for further site protection in the face of a renewed bid to build a Disneyland-style theme park on the site, employing 500 staff. In considering writing a letter of support from DF, I contacted Jamie Robins (Buglife) who kindly sent me a list of Diptera recorded by commissioned surveys. Rob Wolton and I went through the 351 records (Excel spreadsheet) which include a good number of pNS species and some rare or localized ones such as *Lejops vittatus, Platycheirus amplus, Thereva fulva*. Unfortunately, the records listed do not show the recorder or determiner.

The number of fly families recorded is few, and then mostly the "easier" ones. There is much scope to improve the species inventory for Swanscombe by sampling the more challenging, and often species-rich, families not recorded so far, e.g. Mycetophilidae, Anthomyiidae, Sphaeroceridae, Phoridae. I mentioned to Jamie Robins, who has a close association with Swanscombe, that DF would be happy to help by undertaking some recording at the SSSI. I'll keep you posted.

In the letter to Buglife I wrote that as DF can only endorse records of species that have been verified by recognized specialists/experts, then we cannot comment on the records other than to say that if the identifications are correct, then Swanscombe hosts an assemblage of flies that is of national importance. Matt Shardlow and Jamie Robins acknowledged this point.

Rob Wolton helpfully pointed out to me that DF is more like BTO than RSPB in that it supports advocacy by the provision of verified records as well as targeted surveys and reliable habitat information for sites.

Mark Welch

UK BAP **& Adopt a species**

Here in the south east (Oxfordshire) 2021 gave us a very wet winter and spring with high water levels in the fens until the end of March. Subsequent cold and dry April followed by cool and very wet May may have kept water levels up in fens but retarded emergences. It certainly made it difficult to record species due to either too cold or too wet for flying invertebrates. Drying-out of fen surfaces so far is nowhere near as bad as in the summers of 2018 and 2019, but recent heat and dry conditions (writing on 20th July) may change this.

***Milichia ludens* (Milichiidae)**

Photo –*Milichia ludens* wing. Philip Cutt.

This small secretive black fly with a unique wing structure (large jagged 'tooth' at the costal break) breeds in the nests of the Jet Ant *Lasius fuliginosus* inside the 'carton' nest of chewed wood (similar to a wasp's nest) that the ants construct inside hollow trees, usually in the base. In Cothill fen NNR, the host tree is a dying ash on the fen margin. This first was noted as having newly emerged *Milichia ludens* flies sitting on the bark above the ant's entrance at the tree base on 16th April. Unfortunately the host tree has Ash Dieback (Chalara) but has been high pollarded in an attempt to prolong its life. It might soon need another degree of trunk reduction as the dieback continues with the progressive death of upper branches. The aim being to keep the main trunks upright as long as possible and prevent the tree toppling over (the ant's nest is usually destroyed if this happens). The jet ants harvest honey dew from aphids that feed on ivy that climbs up the now reduced ash tree, and ivy from the trunks of a couple of nearby young oak trees.

Permission from Natural England being achieved, I was pleased to assist the Natural History Museum Darwin Tree of Life project by pointing out the flies to the collecting team on 25th April, where they took one of the 3 flies present.

***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 Lye Valley SSSI fen or Cothill fen SSSI/SAC. 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 – My fly season starts with this delicate brown cranefly species. Two males were swept in Lye Valley fen SSSI on 21st April and one male was swept from Cothill fen NNR on 23st April 2021 around normal time for seeing this species in Oxon. Larval development depends on short wet fen (cutting and raking or grazing to maintain this) and in particular water logged moss mat, wherein its camouflaged larvae live. Other fens in Oxon have having restoration work to re-generate these short conditions, but the chances of this weak-flying species being able to recolonize these sites now isolated by unsuitable habitat, seem slim.

In Cothill Fen, whilst these are not my rare fly guardian species, it was interesting to note that at the first large adult soldierfly of any species found on the wing was a black colonel *Odontomyia tigrina* on 28th May. Ryan Mitchell saw both flecked general *Stratiomys. singularior* and long-horned general *S. longicornis* in the fen on 6th June

As to the rarer soldierflies, the first individuals of orange-horned green colonel *Odontomyia angulata* were swept in early June at Cothill (later than last year) 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). 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. However young dipterist Ryan Mitchell reports it in the area .This species is not confined to fens in Oxon, having larvae that can survive shallow pools that dry out completely in summer. I was pleased to assist the collecting team of the Darwin Tree of Life project achieve an *O. angulata* specimen on 19th June.

The very rare clubbed general soldierfly *Stratiomys chamaeleon* was first sighted in the Parsonage Moor section of Cothill fen SSSI/SAC at the early date of 11th June (9th June last year). No further individuals were seen until 18th July. At the earlier date the usual nectar source of parsley water dropwort *Oenanthe lachenalii* flowers was not yet available so it is possible flies leave the site in search of other food sources until the water dropwort flowers are available. No hogweed or wild parsnip (other favoured nectar flowers) are on fen margins as is the case in the Anglesey fens (the fly's other stronghold) This illustrates the difficulty of to accurately assess the population until the parsley water dropwort comes into flower in late July. It is expected to be on the wing until August. The very latest news is that I was able to capture an image of a female *S. chamaeleon* ovipositing on a reed leaf of a plant growing in a peat cut area at Parsonage Moor with standing water full of chara stonewort mat on 18th July at around 11.30am in hot and sunny conditions.

Photo - Female clubbed general *Stratiomys chamaeleon* ovipositing on a leaf of common reed on 18.07.2021 in the peat cut section of Parsonage Moor (Cothill fen SSSI/SAC) Photo J A Webb

Judy Webb July 2021

Technology

Interoperability dreams

If you belong to the generation "geriatric millenials" a term much hated by those born around 1980-85 or to previous generations then you'll be familiar with the term **interoperability** because you've lived through some massive changes in the way technology operates. Alex Hern, writing in the Observer's New Review (Why won't our gadgets just work together, 30.5.21) simply describes the loss of interoperability as "*nothing works with anything else any more, and it's starting to become a problem*". Hern is talking about popular things like music of course, it appears that the likes of us who own Hi-Fi systems as "separates" and use MP3s & CDs are a bit behind the times.

Dreams of interoperability date from around 2001 and have gradually died away as commercial interests have focussed on proprietory formats instead. Hern's is an article building up to a discussion of battles between commercial giants on popular applications of course but dreams of interoperability in our sector of biological recording, geographical information systems and even photography to a lesser extent were fading even as they began. Commercial interest in our kind of pursuits is low, we tend to hitch ourselves to the waggons of others or soldier on with what we've got.

Geospatial compatibilities

SatNavs: It occurred to me that it might be possible to work out a bunch of car-parking sites for locations on our Cornwall field week and get them bunged into our SatNav in advance. Nothing too "uninteroperable" in that idea, Garmin stuff is based on old tech and Google Earth's kml format is as old as the hills. It does prove to be possible but is a bit of a palaver.

Handheld GPS: The **uninteroperability** concept becomes more acute as you try to get a little more sophisticated with your mapping and want to see sites on a proper map on, say, a tablet (presumably this includes mobile phones.) Ordnance Survey maps are the most appropriate for our use. I've got the 1:50,000 maps for the whole UK on one of my GPS devices. The license for that cost a pretty penny and because it's not transferrable only lasts for the lifetime of the device. I can see them on Garmin's Basecamp application on my PC too when my GPS is connected but not on any other application. Their 1:250,000 digital maps can be obtained too. There was a story long ago that these might be bought separately but that turned out not to be the case; you get them singly when you buy a new paper map. Then you can upload the digital copies to your chosen device via an app, a tablet in my case. Again, your license only lasts as long as the device does. Turned out I wasted my money on a duplicate set of paper maps though. The OS digital downloads didn't work with the OS app on my tablet and their "support" finally gave up on helping me out after several weeks of trying. Their last suggestion was to buy new equipment. They then sent me a "how did we do" online survey.

We supported the "Free our data" campaign back in the day that O.S. were being criticised for re-selling public data back to us. It's still there at http://freeourdata.org.uk/ and still relevant apparently.

Tools you can trust

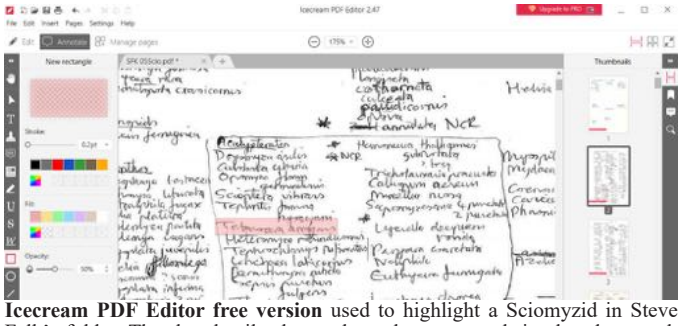
Recent diptera work has highlighted a couple of tools that we use or may use to help move our biological recording along.

PDF editors are one such. I delved deeply into a range of these when Adobe abandoned the purchasers of their "for life" software in favour of a subscription payment model. I ended up with Foxit's PhantomPDF. Both Phil Brighton and I now have this and it's proved very handy in working with the pdf files of Bulletins, Newsletters and Digests that DF members can now download from our website.

Making use of the search function across batches of published papers is one of its functions, and especially fun when you're trying to translate Russian. It's proved handy too in our recent project to digitise records from pdf scans of handwritten notes. The ability to highlight areas on handwritten pages is particularly valuable.

If you are simply using a pdf reader then it's worthwhile looking into alternatives, pdf editors give you a good deal more functionality. Foxit's PhantomPDF costs money of course but there are free versions by other companies knocking around. It's worth hunting around for them but check that they are capable of that area highlighting function.

Here's one:



Icecream PDF Editor free version used to highlight a Sciomyzid in Steve Falk's folder. The thumbnails show where the watermark is placed on each page. Lose this by buying the full version for £40. It seems very easy to use and there are a number of colours you can use to highlight by drawing low opacity coloured boxes.

Not as feature-packed as PhantomPDF but it seems to do this job elegantly well. At zero cost there's no excuse for not getting involved in our digitisation project.

The name means it's also going to be a favourite with Alan Stubbs.

Microsoft Excel: I took the plunge and bought their "for life" version. The latest one before you get stuck with a subscription payment model is Excel 2019. They make you buy their other stuff which you may not need (Word, Powerpoint) and though I'm pleased enough with Excel, it'll take a long time to be £108-worth pleased.

Scratchpads

The **Natural History Museum** took on this project (http://scratchpads.org/) as part of the outcome of the House of Lords Enquiry into Taxonomy.

At one time it fell into the doldrums, technical difficulties caused some who started to build their websites using this framework to abandon them.

They enjoyed a renaissance a couple of years ago when those issues got fixed. I constructed mine and because I kept notes as I solved each technical task I was able to help others get started.

Take a look at the latest two from our Diptera Recording Schemes:

Micropezids & Tanypezids - https://micropezids.myspecies.info/

Agromyzidae - https://agromyzidae.myspecies.info/

I thought I'd put a lot of work into mine but Barry Warrington's efforts are phenomenal, considerably more taxa and he's included all the plant associations too. A proper *vade mecum*, equivalent in fact to a book.

The NHM Scratchpad team have hit problems again recently, if they'd care to contact us I'm sure we can assist in putting our collective weight behind their efforts to resource solutions. They're such a valuable asset to us all.

See our Recording Schemes back pages for a full list.

Darwyn Sumner

Review

Open Data

Open Data is a topic raised a few times in this and recent Bulletins. If you read Stuart Ritchie's *Science Fictions* (review in Bulletin 90) then you'd have a good idea of what the term means.

It's of key interest to us all because we record, sending our records to various Schemes and to Global Biodiversity Gateways such as NBN Atlas. In other words we actually generate this Open Data.

For a very readable (and free) introduction to the concept you can do no better than the following:

Murray-Rust, P. (2008). Open Data in Science. Nature Precedings. Retrieved from https://www.nature.com/articles/npre.2008.1526.1

Much has been written since then of course. An internet search will find published material across a wide range of scientific genres. Key areas of interest to us are ecology or biodiversity. Recent favourites of mine being

Wetzel, F. T., Bingham, H. C., Groom, Q., Haase, P., Kõljalg, U., Kuhlmann, M., … Häuser, C. L. (2018). Unlocking biodiversity data: Prioritization and filling the gaps in biodiversity observation data in Europe. Biological Conservation, 221(January 2017), 78–85. https://doi.org/10.1016/j.biocon.2017.12.024

Couture, J. L., Blake, R. E., Mcdonald, G., & Ward, C. L. (2018). A funder-imposed data publication requirement seldom inspired data sharing. PLoS ONE, 13(7), 1–13. https://doi.org/10.5063/F1T151VR

Costello, M. J., Michener, W. K., Gahegan, M., Zhang, Z.-Q., & Bourne, P. E. (2013). Biodiversity data should be published, cited, and peer reviewed. Trends in Ecology & Evolution, 28(8), 454–461. https://doi.org/10.1016/j.tree.2013.05.002

Costello, M. J., & Wieczorek, J. (2014). Best practice for biodiversity data management and publication. Biological Conservation, 173, 68–73.

There are many fascinating quotes from these which are of particular relevance to us:

> **Costello et al. 2014:** *The need for biodiversity data to be easily and permanently accessible is particularly important for conservation. Collecting data on the occurrence of species of conservation concern is especially difficult, and thus costly, particularly for species that are low in abundance, geographically rare, and that avoid people due to hunting. Perhaps half of all species have distribution data in the main world species database, namely the Global Biodiversity Information Facility (GBIF) (Costello et al., 2013b). This makes supporting species' Red List assessments with empirical data challenging. Considering the concerns over species extinctions, it is critical that past and recent biodiversity data are readily available to researchers and policy makers to enable the best possible conservation decisions.*
>
> **Couture et al. 2018**: *In an effort to defend intellectual novelty and guard future publication opportunities, scientists often withhold data from the larger scientific community* **AND** *The focus in science has traditionally been on production and citation of publications, and as such, a process for identification and citation of manuscripts has been well developed. Similar attribution and recognition of data would incentivize the archiving and sharing of data in the scientific community. One way publications are tracked and cited is through the use of digital object identifiers (DOIs), a tool that is also increasingly being used to attribute data. DOIs are particularly important for data identification because unlike manuscripts, data can be regularly updated or exist in multiple formats or subsets, so identifying specific versions of the data via a DOI is key to data proper data attribution and use. Although the use of data DOIs is a relatively new practice, they should facilitate more routine data citation as compared to traditional methods. Incorporating data citations into a scientists' overall research output alongside journal publications should further incentivize data sharing.*

All relating to principles that Dipterists Forum hold dear, enshrined in our formal objectives and evidenced in our Open Data publishing to NBN Atlas. This year alone we've **doubled** those on our NBN Atlas page. More will have undoubtedly been added by Schemes using the iRecord transfer mechanism and more are scheduled.

Darwyn Sumner (Biodiversity Open Data Ambassador)

Open Access

ResearchGate Preprints

At a loss when it looked like some articles of mine could take over a year to get printed in Dipterists Digest, I looked again at what ResearchGate had to say on the subject of preprints. I'd had the articles (and several more) uploaded to my Scratchpad site, which is fine as a store but hardly a place where potentially interested researchers hang out. ResearchGate's thinking on the subject of preprints accorded well with my own so I gave it a shot.

Much to my surprise, within a single day my article on *Micropeza lateralis* had been read 50 times (100 within a week.) Thinking about why it seemed so popular (my others have been up there for years and interest is slow) my guess it's because of the multi-disciplinary nature of the piece. Upload to ResearchGate and it trawls through all your references, alerting the authors of each paper that they've been cited. This one had lots of stuff on biogeography, legume nodule studies, related crop-control, even beetles and aphids so authors in those disciplines will have taken a peek.

ResearchGate also gives you a DOI (explained in Bulletin 91) which was a pleasant surprise.

Gratifyingly it was also brought to the attention of a top European researcher in the particular Diptera field. So I've now had an offer for the article to be published in a European Museum journal. I dedicate a lot of time to the Bulletin so it's good that the Diptera work I can squeeze into the other small gaps in my time get to see the light of day.

Tips for writers:

> Collect articles using Mendeley and acknowledge them in your references if you used them (no typing involved, just a copy and paste from your Mendeley list)
>
> Upload a preprint as soon as it's fit to be seen - this can be considered part of the peer-review process as you may get comments from others on ResearchGate.
>
> If you've already had something published, bung that on ResearchGate. If it gets cited by someone else then you'll get notified (see Bulletin 91) and see new papers in your field of interest.

Books

The Lorax

Dr. Seuss (1971)

£11.99 (hardback, 50th anniversary edition)

The reading age for this book is 4+ and takes about 10 minutes to read. Ideally you'd have youngsters in your family in which case you will be reading it for many hours. It's something that apparently is one of Greenpeace's staple books. Recently republished in hard cover and slip case so if you missed it back in the 70s then now might be the time to catch up. BBC Radio 4's Michael Rosen reviewed it in great depth in March where they considered it highly significant in raising environmental destruction awareness. Apparently it was banned in several US states because of its anti-logging sentiments ("I'm a lumberjack and I'm **not** OK.")

Favourite quote:

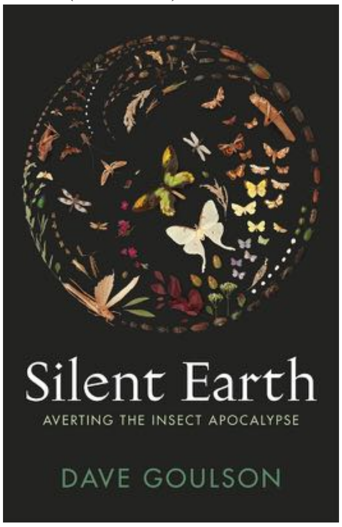
> *I meant no harm. I most truly did not.*
> *But I had to get bigger, so bigger I got.*
> *I biggered my factory, I biggered my roads,*
> *I biggered my wagons, I biggered the loads.*

"You were told and you didn't act" (Rosen)

Silent Earth: Averting the Insect Apocalypse

Dave Goulson (August 2021)

<£20 (hardback)



Probably the most significant book on entomology you'll ever acquire. Goulson's book updates Rachel Carson's *Silent Spring*, detailing a situation today that is far worse than she imagined. For a detailed synopsis and blog visit The Observer's New Review (25/7/21) at https://tinyurl.com/pb59kuzu

One intriguing topic is that of Baseline Shift - which we've mentioned in the Bulletin before. It's the idea that only older naturalists are able to draw upon their memories of a more biodiverse landscape from their youths - and even they forget or get used to current levels of biodiversity and misremember. Everyone else simply accepts that their observations are the norm. The rate of loss isn't easily detectable within a human lifespan.

This concept can be tested. The following is a clip of just the Sciomyzidae from Steve Falk's notes of his visit to East Walton Common in 1989 (6th July):

Revisit the site at long intervals and see if you can find them all again.

Goulson's professional work has involved analyses of the response to the highly toxic neonicotinoids and glyphosate by insects (bees in particular), their long-term persistance in soils and take-up by wildflowers almost everywhere you go. No wonder we can't find anything. Each chapter in the book deals with different types of threat (e.g. habitat destruction, climate change, invasive species) and between each is a single page story of some fascinating insect or other - a great trick to keep younger readers interested. The final chapters include a sci-fi style dystopian view of the future, topped off with a whole bunch of things that individuals can do, including "raising awareness" - one objective of this review. High on the list of the top ten books you should read before they die.

Darwyn Sumner

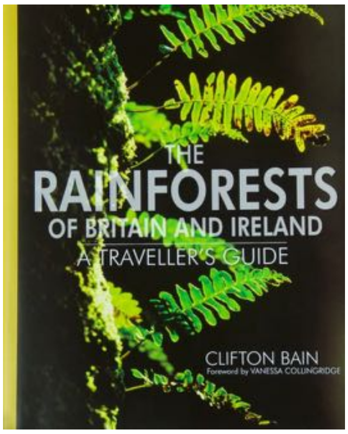
The Rainforests of Britain and Ireland

Clifton Bain (2015)

£17.55 (hardback)

My impression was that these were restricted to other parts of the world (Australia: temperate zones in the south, tropical in the north) However it turns out that there are many in the UK. I stumbled across these when reading some Guy Shrubsole tweets (Who owns England author) and he's got a site "Mapping the lost rainforests of England" at https://tinyurl.com/vfefuc

Clifton Bain's book seems to be the source for this interest; others who have a thing about this are **Woodland Trust** who have a site covering it at https://tinyurl.com/3tjhs4n4 and **Plantlife** with their survey at https://tinyurl.com/9hfrkdz8 Their Rapid Woodland Assessment survey has a map showing innumerable results from Devon & Cornwall.



I have to say, having looked closely at both lists of sites, that they seem a bit of a mixed bag. Several are unconvincing but others fairly clear. I didn't find any in Cornwall but the Welsh sites suggested look intriguing.

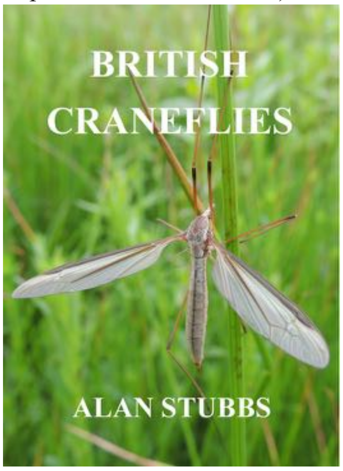
Perhaps you've some photographs in your collection depicting trees in wet woodland with mosses growing up their trunks. Certainly I have. Are there any special flies to be found in such places?

Darwyn Sumner

British Craneflies

Alan Stubbs (2021)

£36 hardback (Pemberley Books) £29.50 (BENHS if you are a Dipterists Forum member)



Leonard Kidd offered me a choice when I first took up an interest in Diptera in the 70s. He'd bundles of papers he let me have on the identification of both Craneflies and Syrphidae. I chose the latter because the keys seemed easier and storage space smaller. Eventually along came a good book on the subject by Alan Stubbs to make the job easier and now he's done it again. Did I make the right choice?

British Craneflies follows the pattern set by its sister books Hoverflies and Soldierflies and so will be familiar to many. I made a beeline to the Checklist to get a grasp of the size of the group: Tipulidae 87, Cylindrotomidae 4, Pediciidae 20, Limoniidae 230, Trichoceridae 12 & Ptychopteridae 7 (UKSI figures.) That's lot of legs. Wings too, all superbly illustrated by Chris Spilling, many genitalia figures by John Kramer (others by Carim Nahaboo & Dawn Painter) together with a number of photographers on the coloured plates. Yet another group now with a comprehensive list of vernacular names by Alan.

The key's figures are of Alan's familiar "thumbnail" style, well suited for working through them. The book as a whole has been under development for a number of years, the Cranefly Recording Scheme being the first ever to form in 1973. During that period many hands have supported its progress, from Stuart Ball working on those thumbnails, John Kramer helping keep the interest going via the newsletter and Pete Boardman, co-organiser of the Recording Scheme, via test and regional keys and delivery of workshops at Preston Montford.

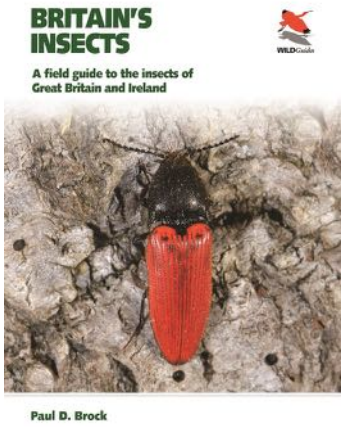
Doubtlessly more technically competent reviews will appear in time. In the meantime I'll be keeping myself busy absorbing all that fascinating stuff about behaviour, life-history, habitat, ecology, conservation and relationship with other organisms. For a photographer with no need for specimen storage space perhaps it's time to focus on these beasts now; a whole new light is shed upon them.

Darwyn Sumner

Insects

Britain's Insects – a field guide to the insects of Great Britain and Ireland

Paul D. Brock



This new WILDGuides key aims to introduce as many different groups of insects as possible which was never going to be an easy task considering there are over 25,000 species to play with. But I am impressed at what it has achieved. It's a big book – 608 pages in comparison to 524 pages in the previous incarnation of the book. There are less photos in this version and not as many individual species given but I prefer the design and find it more user friendly. What it lacks in species accounts it makes up for it in other ways including more information about how to determine what the insects are in the first place.

The book helpfully starts off with Order level keys – to both the adults and the larvae, a glossary, a section on watching and photographing, a one-page taster to insect behaviour and a description of what we will find in the species accounts. Just knowing what camera settings or the apparatus used is helpful to a novice like me. I do like the fact that the inside the front cover there is a flap with the relevant codes repeated as well.

The majority of the book, as you would expect, is taken up with insects themselves. Let's take the flies as an example. Brocks briefly introduces us to the morphology and some of the behaviour but admits that this book can only highlight a small percentage of them. But usefully he highlights key texts and the @DipteristsForum for further info. What he does do that I love, and he does this with all the other orders, is start with annotated images of their key features. I may know a bit about flies, but this is so helpful when learning about the other groups. And although he can't cover all the UK families he does highlight how many species are found within the ones he references. There are more obvious genera where all the species are all included (all four *Bombylius* species for example) whilst other ones are completely left out (No Mycetophilidae are mentioned but the Keroplatidae get a nod in the quick intro to some of the families).

For each species described though there is a species distribution map, a seasonality chart and a description of size, morphology, and habitat. Where known and relevant food plants are given as well as their conservation status and protection. Importantly, similar species to those included are given – many folks are keen to ID without careful attention and this highlights the need to exhibit caution with species level identifications. I like having the images next to the text rather than on the opposite page and having a graphic representation of seasonality – it enables me to concentrate better on the information provided.

As a dipterist though the value of this guide not lies in the diptera keys but a helpful hand through many of the other groups I am less familiar with. There are pictorial guides to the differences of many of the insects e.g. the heads of the three genera of social wasps or the undersides of abdomen tips of cockroaches. This year there have been an abundance of Scorpionflies and the clear photos of the wings as well as the genital capsules have been an invaluable aid to identification. Just knowing which bits to photograph of the insect in the field is useful. There are also some helpful diagrams, for example how to separate the two suborders of beetles. I have found this guide useful whilst both in the field and at home sifting through malaise samples.

The images are all of good quality and some amazing photos have been included (I particularly like the chewing lice holding onto the fly *Ornithomya avicularia*.)

And one of the neatest things about the book was the inclusion of the songs of the grasshoppers and crickets. Not only were they described and an oscillogram included but there are QR codes that you just flash your phone over, and if connected to the web, you can listen to them as well – I thought this was fabulous.

A hefty 84 pages has been dedicated to Lepidoptera which I feel is not necessary – there are other more detailed guides on this Order, only 105 were given to Hymenoptera that have considerably more species but a presumed lower appeal.

At the end of the book further information is given to online resources, museums, recording schemes, Insect Societies and other relevant organisations. Brock gives you lots of information and then helps you go gather more!

This guide is a fabulous photographic guide for both beginners and 'experts' and a complete bargain at around £20 from most good bookshops.

Erica McAlister

Papers

Connecting data and expertise: a new alliance for biodiversity knowledge

Hobern D, Baptiste B, Copas K, Guralnick R, Hahn A, 2019. Connecting data and expertise: a new alliance for biodiversity knowledge. Biodiversity Data Journal 7, 20.

From the title of the journal there seem to be many professionals working in the area of Biodiversity Data. I just happen across the occasional one.

This one is of interest as it contains a lot of background information about the various organisations working in the subject and focusses on the initiatives in place to gather biodiversity data - which is what we all do a lot of.

Lots of quotable stuff in here, like the Aichi 19 target "*By 2020, knowledge, the science base and technologies relating to biodiversity, its values, functioning, status and trends, and the consequences of its loss, are improved, widely shared and transferred, and applied*."

It's packed with links if you are curious about other areas (marine anyone?) and espouses principles which have much in common with our Dipterist Forum objectives:

Support for open data and open science

1. To remove barriers to free and open sharing of data and to the adoption of FAIR data principles (Wilkinson et al. 2016) for biodiversity data
2. To describe all data resources with rich metadata that supports present and future reuse
3. To ensure all data resources are preserved in stable and persistent trusted repositories
4. To enable collaborative curation, annotation and improvement of all data by any relevant experts and expert communities
5. To enable all contributors of knowledge or expertise to have their contributions fully recorded, acknowledged and credited
6. To track the provenance and attribution of all sources of information

Download it from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6420472/

Conservation Grazing (cud do better™)

Did all fly-friendly vegetation on your reserve finish up in a cow's stomach before the flies had finished with them?

Denton says "*grazing, especially in summer, can be highly detrimental for the vast majority of the fauna*" The appropriateness of this practise is also questioned by those concerned with the conservation of reptiles.

We should continue to do so. If you've any observations on fly-unfriendly grazing on any habitat then please let us know, we're preparing an account.

Denton, J. (2014). Heathland conservation grazing : It's not all good. ECOS, 35, 3–5. [https://tinyurl.com/uksvyzd9]

Twenty Years of Dipterology

Whitmore, D. (2021). Twenty years of Dipterology through the pages of Zootaxa. https://doi.org/10.11646/zootaxa.4979.1.17

Darwyn Sumner

Blogs

Reversing insect declines – a matter of personal responsibility before our own existence

Radoslav Valkov (Bulgaria)

Buglife https://tinyurl.com/5b787nyv

Radoslav illustrates *Rainieria calceata* which he finds in his garden **and** credits my Scratchpad site. What's not to like about this blog?

New biodiversity algorithm 'will blight range of natural habitats in England'

Phoebe Weston

From the Guardian at https://tinyurl.com/jtdzm5rm

A number of ecologists are highly critical of this proposed metric devised by Natural England. These include Isabella Tree (of the Knepp rewilding project, DF members have visited there) and Steven Falk. This proposal puts Natural England's chair, Tony Juniper in opposition to many knowledgeable ecologists and naturalists across the board. Buglife's Jamie Robins for example stated that "*habitats that had existed for decades or centuries could be destroyed*"

Mark Welch and Judy Webb provide an analysis in this Bulletin (Conservation)

Darwyn Sumner

Science Fictions 2

Stuart Ritchie's Science Fictions was one of the most intriguing books of the past year. It didn't cover our sectors much, being more inclined towards medicine and psychiatry and stuff but the principles are well espoused I gave a couple of examples (Review in Bulletin 80) but I keep coming up with more. Ritchie espoused Fraud, Bias, Negligence and Hype but I suspect there are historic reasons why the natural world is entitled to another set of categories, after all we invented dragons and manticores:

Myths & legends

Monster myths abound, they range from Durer's Rhinoceros, serious attempts to prove and name the Loch Ness Monster through to extinction-denial. They help sell books, movies and magazines (even serious science ones). Expect to see documentaries on live Dodos eventually. These myths move substantially into our realm too.

Dead fly myths: Once a fly has been published it won't go away, it just litters the literature for evermore. There are 3 in the genus *Micropeza* that probably never existed but keep popping up. How do you get rid of them for good? No good writing a paper, some kind of fly-name obituary. Even if this were in a highly respected Open Access journal, someone will still find the older stuff. And so they live on, interfering with keys and the good intentions of authors. Long after good keys and checklists come along.

In the UK our best defenses are the enthusiasts managing the Recording Schemes, who pay attention, and Dipterists Forum's peer-review system led by Peter Chandler with his phenomenal network of people in-the-know.

Legends: The classic example in my area of study is the claim that Calobatinae are predatory. With long bare legs and a permanent sponge in their mouth, they can't catch or kill anything. That's a legend based on an old misinterpretation in a classic UK book but no matter how many times it's debunked it keeps cropping up in publications. It's a meme that simply won't die regardless of how ridiculous it is. Careful and critical observation is the key. There was an example of the same feeding behaviour in Peter Chandler's last newsletter, just take a look at a particular fly's unspecialised mouthparts, the feeding opportunites are limited to saprophagy, glycophagy (on honeydew and on exudates of aphids and other sedentary invertebrates), coprophagy, phytophagy (damaged leaves), pollinivory & necrophagy. Anything more complicated than that will require something more sophisticated than a sponge.

Vernacular names are a great source of myths. Species have different common names in different languages so any one list is bound to be wrong somewhere. There are some big mistakes however, the Carrot Fly is a beetle, the Carrot Root Fly is a dipteran (Psilidae)

Misidentifications

Three recent examples perhaps illustrate that this is rife. In a recent Leisure Painter magazine there's a detailed account of how to paint a Red Admiral butterfly, trouble is that the illustrations are of a Peacock butterfly. Fly Times #66 gives an example of a book, *The fascinating world of bees*, who's front cover illustration is of a hoverfly and the iNaturalist AI gets thrown by phone users using old tech, suggesting IDs from the wrong continent. We verifiers have to fix those but if we miss them then don't be surprised if something weird crops up on GBIF.

Mapping myths

The myths extend to other areas too. Our recording efforts should be leading towards good quality distribution maps. Ideally this would be the UK's NBN Atlas or beyond our shores, GBIF. These are aspirational targets and many of us are working towards ensuring that these get filled with good quality data. In the meantime, several schemes will produce UK Atlases of their own. Notably Hoverflies, Tephritidae and Micropezids & Tanypezids.

For writers wishing to comment on distribution the following sequence is optimal:

1. GBIF (overseas) - as a guide only, it works for popular taxa but not for others (may have errors)
2. NBN Atlas (UK)
3. Compiled records (for those who gather their own)
4. Published atlases from Recording Schemes
5. Scratchpad maps (only if their managers deploy them, e.g. Lonchaeidae)
6. Fauna Europaea - but only as a rough guide. **If you can't prove it don't use it**. The information is also "decades old".

7. iNaturalist - should not be used at all unless you first contrive to add their records to 1. or 3..

Old maps are used in modern accounts though. You wouldn't use an old 1" Ordnance Survey map to navigate around the country, why would you use old distribution maps?

It's been a long time since we saw a publication with the patchwork quilt maps of Vice-Counties in the UK. Though they were superceded by spotty maps they had value in determining areas where best to focus effort. You'll find examples of this sort of map in old Floras. County maps for flies are now, of course, the province of County recorders (see our map.)

At the broader scale of Europe these kind of maps still exist. They are more justifiable because of the current shortage of data to produce "spotty maps" at that scale.

Fauna Europeae produces those patchwork quilts. That's all it does though. Pick a taxon and it gives you a map and a list of countries. No indication of where that taxon occurrence was published as occurring in that country. Without evidence how much of this is this merely conjecture?

> It's a complex thing to deploy if you think about it. A 2D matrix of every European country against every European taxon. Presented one way you can show a map for every country. Presented the other way you have a list of taxa for each country, country checklists in other words (though this isn't done on FE, it's too complicated.)
>
> That's just a presence/absence (0/1) matrix though. Add the references and you've a 3D matrix - which is what NBN Atlas and GBIF do, they put evidence instead of 0/1s.

Just how reliable is Fauna Europaea? The taxonomy should be spot on as the site is taxonomy-driven, utilising the skills of top experts, such as Paul Beuk and, at one time, Peter Chandler.

It hasn't been updated in a long time though. A comparison in Sumner 2018 details the differences between old FE data and distribution known from current GBG data and published papers from one small group of Diptera. The mismatch is enormous.

Any paper indicating European distribution by quoting Fauna Europaea alone should certainly be questioned nowadays. Authors should at least search GBIF and prove each country presence via a published paper or database.

References:

de Jong Y, Verbeek M, Michelsen V et al., 2014. Fauna Europaea – all European animal species on the web. Biodiversity Data Journal 2, e4034.

Pape T, Beuk P, Pont A et al., 2015. Fauna Europaea: Diptera – Brachycera. Biodiversity Data Journal 3, e4187.

Sumner, D. P. (2018). European Atlas of Micropezids & Tanypezids V7. Dipterists Forum Report: Stilt & Stalk Fly Recording Scheme, A 1(1 V5), 1–94. DOI: 10.13140/RG.2.2.34834.99529

Darwyn Sumner

Countryside Access

One of the reactions by landowners to the increased interest and use of the countryside during lockdown has been to restrict access.

National Trust

There's a very useful map tool produced by National Trust at https://www.nationaltrust.org.uk/features/follow-the-history-of-our-places-with-land-map [https://tinyurl.com/4zm9sd2d]

The default setting colours their land holdings by acquision dates but click on the Layers button and you can change this to "access status". That is to say you can view the status of NT land according to whether it is Open Access land (see Shrubsole, 2019) or is in some way restricted access.

Either it's hopelessly out of date or their staff are ignorant of it as I was prevented from Open Access at Felbrigg in Norfolk when I was kindly given a lift there by an NT member. A whopping £8 was demanded from this walker to go and record flies on their "Always Open" land; not exactly the spirit of their founder, Octavia Hill, who campaigned for the 1949 Access to Countryside Act. Needless to say I declined, amateur naturalists don't pay just to record.

National Trust have a reputation for prosecuting trespassers so I departed; fortunately my driver also kindly gave me a lift off their so-called "Always Open" land too.

Felbrigg Hall in front of the Old Deer Park & The Great Wood: Always closed?

NT have fallen foul of photographers too, demanding the removal of images of their properties from websites. Amateur Photographer editor Nigel Atherton challenged their legal right to make these demands and has offerred to print pictures of NT properties in AP magazine just to prove he's legally right. Me too.

MOD & Councils

The Save our Spaces website (https://saveourspaces.co.uk/) gives examples of access closures by the MOD in Ash Ranges and Middlewich Ranges, the latter being pounced upon by their local council (Colchester, Essex) to incorporate it into their so called "local plan" for housing development despite its category as a Local Wildlife Site and without any surveys or wildlife assessments being carried out beforehand (but see fig. 2.9 in Dickie et al., 2021)

https://saveourspaces.co.uk/we-are-not-alone-save-the-middlewick-ranges

Darwyn Sumner

Members

Membership Matters

By mid-July 2021 we had 437 paid-up members and 384 subscribing to the Dipterists Digest. We have received new subscriptions from 42 people this year continuing the increased rate of new subscribers we saw last year. Unfortunately this has not been supported by renewals of subscriptions so we are still well down on our membership numbers at the end of 2020. Hopefully more people will renew later in the year when they do not receive the Autumn journals. It does help us greatly with planning print runs if members can pay their subscriptions in the first three months of the year. Subscriptions 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:

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

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 only (includes the Bulletin): £14 pa
Dipterists Forum and Dipterist Digest: £25 pa.
We have decided to have an overseas Dipterists Forum membership without having to subscribe to the Dipterists Digest as well as we have had a number of queries about this from overseas.

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

Treasurer's Report

Dipterists Forum accounts for the year ending 31 Dec 2020

Income

Naturally the effects of the pandemic are evident in our annual accounts, though with no adverse effect in financial terms. During the first lock-down it was agreed with our hosts for the summer field meeting at Falmouth to transfer our block booking to the equivalent week of 2021 at no additional cost. We had already made two of the four staged payments for the week but the others have been deferred into 2021. Nevertheless, we did offer to return the deposit to those who had already booked: only one has requested this.

The general surge of public interest in nature has rippled out into an increase in our subscription income of 22%. While costs of production of the Dipterists Digest have remained fairly constant with the new printers, there was a wealth of material submitted for the spring Bulletin resulting in a bumper edition at a considerably higher cost. The autumn edition was shorter but the cost was not much less: a larger number of copies was required and also it was decided to pay the printers to fill the labelled envelopes and deliver them to the Biological Records Centre who very kindly bear the costs of postage. John and Barbara Ismay have thus been relieved of this job, and we thank them for doing this for so many years. We trust that steps now taken to regulate the very welcome flow of news will enable us to hold the current subscription cost.

The cancellation of all events has resulted in a considerable reduction in our costs and other expenditure such as bursaries. The payment of expenses on refreshments for the 2019 Dipterists weekend in Cardiff carried over into 2020, and there were also maps bought for the Falmouth meeting. The costs of posting back issues also increased because of the number of new members joining in the course of the year.

We also had an increase in donations, and are particularly grateful to Roger Morris and Stuart Ball for again passing on the royalties from their hoverfly WILDGuide book: these saw a big rise, probably another effect of the lock-down.

So we ended the year with a surplus of £1,788.

Signed:	P W M Brighton	Treasurer
Date:	12/04/2021	
Signed:	J P Flynn	Auditor
Date:	15/06/2021	

Income

	2019		2020	
Income	£	£	£	£
Subscriptions		7,309		8,954
Back issues	68		99	
Donations	270		441	
Workshop – repayments	100		200	
Training courses	210			
Pooters	18			
Wildguide Royalties	277		760	
Publishers Licensing Society	58		39	
		1,001		1,539
Net Income		**8,311**		**10,493**
Field Meetings - received from participants				
Stirling 2019	7,826			
Falmouth 2021	1,000		1,000	
		8,826		1,000
Total Income		**17,136**		**11,493**

Movement of Funds	**2019**	**2020**
	£	£
Opening balance (1st Jan)	28,413	21,544
Net Surplus/Deficit	-2,702	1,778
Field meeting funds	-4,167	900
Closing balance (31st Dec)	**21,544**	**24,222**

Wanted – Assistant Postmaster to Membership Secretary

I've just had to invent this post title as I've been doing this job for eight years but now wish to hand it on. John Showers, our membership secretary, has enough to do without sending out copies of the Bulletin and Digest to new members and late subscribers, so someone else does this – me, and now, I hope, a new volunteer.

It's a simple job – receiving four boxes of bulletins or journals each year from the printers, putting what John instructs in the post, and keeping tabs on the cost which can be reclaimed from our treasurer. The postage per item varies depending on the weight and where in the world it is going, so I have been cycling to the village post office so there's no doubt that the correct postage is applied. But our post office is closing shortly which gives me the pretext for handing the job on.

In the last two years, I have posted letters every 1-2 weeks at an erratic trickle, so it is not onerous. A new hand may find a more efficient way to deal with the postage other than visiting a post office. Some dry space is needed for holding the issues, and they do start to build up at an alarming rate. I have a huge pile of back issues from year dot, even after recycling lots, but I would not expect anyone to take all these away. The Committee can decide how best to deal with my quarter ton of old issues and how ruthless a new Assistant Postmaster can be with paper; all is available on our website now so there's less need to hold on to hard copy.

Get in touch if you would be willing to take on this task.

Martin Drake
martindrake2@gmail.com

Expenditure

Expenditure	2019 £	2019 £	2020 £	2020 £
Dipterists Digest 25.2	922			
Dipterists Digest 26.1	913			
Dipterists Digest 26.2	1,234			
Dipterists Digest 26.2			1,164	
Dipterists Digest 26.2			1,208	
Digest envelopes	748		23	
Digest postage	1,062		1,092	
		4,879		**3,487**
Bulletin 87	1,195			
Bulletin 88	1,331			
Bulletin 89			2,044	
Bulletin 90			2,042	
Bulletin envelopes	208		175	
		2,734		**4,261**
Publishing software	419		101	
Back issues	216		434	
Website hosting	23		47	
Training courses & workshops	189			
Bursaries & grants	1,103		105	
FSC workshop advances	300			
Buglife Subscription	10		10	
Donations	300			
Norfolk Bird Fair	319			
AES Exhibition	41			
Dipterists Day			29	
Committee expenses	79		50	
Insurance	138		138	
Subscription refunds	20			
Field Meeting expenses	241		54	
		3,400		**968**
Net expenditure		**11,013**		**8,715**
Field Meetings - payments on behalf of participants				
Stirling 2019	7,515			
Falmouth 2021	5,478			
Refund			100	
		12,993		**100**
Total Expenditure		**24,005**		**8,815**
Net surplus/deficit		**-2,702**		**1,778**

Eulogies

David Michael Ackland 1927 to 2021

Following a fall in November last year, Michael sadly passed away this February. Messages began to arrive from Adrian Pont and several of Michael's friends and colleages, many of whom had been in contact with him only very recently.

The images are amongst those sent to Rob Wolton last June, they are from Michael's collection of a trip he made with Adrian Pont to Abisko in Sweden.

Adrian Pont & Michael Ackland - photograph sent by Jade Savage who joined them in Abisko

The following are taken from messages received by us:

Masaaki Suwa (Japan)

I was shocked at the sad news by your announcement.
When I started a study on the Anthomyiidae, Michael was already a reliable precursor in this field.
Since then I have received much advice from him.
I extend my sincere condolences to Michael's family

Many stories were recounted by those at a Dipterists Forum meeting earlier this year.

Nigel Jones: I met Michael shortly after he moved to Bridport in Dorset. By my good fortune, his new home was close to a friend I regularly visit and I arranged to visit Michael for help with identifying a box of Anthomyiidae specimens. Michael and Heather made me very welcome and we chatted at length about Diptera and Dorset eateries over refreshments.

I was soon introduced to Michael's study in an upstairs room which was fully equipped with microscopes, cameras and computers and all manner of whizzy implements he had devised for preparing Diptera specimens. What impressed me most were the shelves of store boxes all around the room, which Michael told me held Anthomyiidae from many locations across the world. Pointing at one section of shelving he explained that "that box contains about sixty undescribed Anthomyiidae"! Michael was then in his mid eighties and he had already become resigned to probably running out of time for describing all the new species that lurked in store boxes in his extensive collection. He had of course already described many new species, including ten he described in his immaculately prepared Revision of afrotropical *Anthomyia* (Ackland, 2001), a copy of which he presented to me on one of my visits. The review is liberally illustrated with Michael's first class genitalia drawings, which those of us who delve in the Anthomyiidae will be familiar with. Michael was not only an excellent illustrator, but late in his life, he easily mastered preparing genitalia for macro-photography using a compound microscope, camera and photo stacking software. I remember him telling me that he could not understand all the complaining about Microsoft's introduction of Windows 10, which he found easy to adapt to and preferred to the earlier Microsoft system. He certainly seemed to be able to put his hand to many tasks, amongst which was making his own storeboxes from laminated ply wood.

In his career he had worked in theatre design, developed a gold and silver jewelry business and worked at Oxford University Museum of Natural History in the Entomology section. Whilst at Oxford he encountered J.E. Collin, whom Michael told me was rather disdainful of entomologists who were paid to work with insects. Michael soon won Collin over though. He told me that most Dipterists were very deferential to Collin and never questioned anything Collin said or wrote. Michael was confident enough to point out to Collin some clear errors that he felt Collin had made relating to the determination of some Diptera. Collin saw at once that Michael was right and after that he was far more respectful of Michael, ceasing to treat him with the disdain he often reserved for entomological professionals. Michael later made contributions to Collin's work on Anthomyiidae,

Another story Michael related to me regarded his being out in the Bristol area in the 1950's collecting micro-moths when he came across a teenage Adrian Pont with friends who were looking for butterflies. Adrian explained to me that later he had to hand on a package of reprint papers circulated by Len Parmenter at the AES (a reminder that this was how information was distributed in pre computer days), and he noticed that Michael's name and address were on the list, so he cycled round to deliver it and a life long friendship was soon established, with Michael acting as Adrian's mentor. Michael and Adrian went on to form a trio of Bristol Dipterists with the late E. C.M. d'Assis-Fonseca and this undoubtedly sparked Michael's lifelong interest in the Anthomyiidae. Michael and Adrian both helped Fonseca's development of his RES handbook keys for the Muscidae, by testing them on specimens. One of the tales about "Fon" related to me by Michael was Fon's technique for procuring the specimens he required for his studies of Muscidae and Anthomyiidae. Apparently Fon' would sweep for Diptera and would then fold his net bag into a large tin containing a killing medium. Once the sample was killed, Fon would sort through the whole sample in the field, selecting the specimens that interested him most.

Tales of Michael's generosity towards budding Dipterists are legion. He gave willingly of his time and always answered any queries about Anthomyiidae in great detail, often providing all sorts of useful tips regarding collecting, recognising and preparing Anthomyiid specimens. My own skills with this rather challenging family were greatly increased through my contact with Michael. He even put together for me a box of example specimens of all the British genera, which has been a tremendous help for my Anthomyiidae determinations.

Michael often lamented the lack of Anthomyiidae workers across the world, fearing that with his passing there may be no serious workers left. If I were much younger I would be sorely tempted to take up the challenge and try to pick up where he left off, but I'm afraid it would be way beyond my meagre talents now to rise to such a challenge. At least for Britain we have an excellent key drafted by Michael, which despite its rather challenging content, works very well indeed. Allied to the magnificent illustrations made by Michael for all the British species, it is absolutely feasible, with a little commitment, to determine the vast majority of British species.

Along with most who met Michael, I greatly admired his talents and was immensely grateful for his help. He will undoubtedly be sorely missed by the Diptera community.

My thanks are due to Adrian Pont who confirmed details of the Bristol trinity of Dipterists and kindly copied the eulogy given at Michael's funeral.

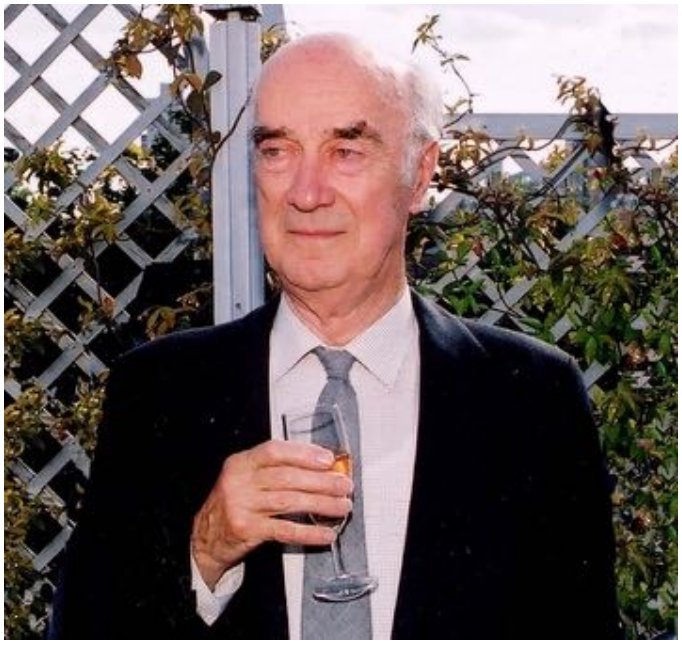
Reference:

Ackland, D.M. 2001. Revision of the Afrotropical Anthomyia Meigen, 1803 (Diptera: Anthomyiidae), with descriptions of ten new species. African Invertebrates. Vol. 42: 1-94.

Howard Bentley: When I first came to the study of Diptera about twenty years ago, I was surprised and delighted to find that there were a number of eminent professional entomologists who were ready and willing to help amateurs like myself. Michael Ackland was one of that small group. For people like myself, discovering the vast diversity of flies for the first time, the Anthomyiidae are a daunting family, and I duly spent some time getting nowhere with trying to identify a few specimens, until someone suggested that I ask Michael for help. So I wrote to him, frankly expecting a more or less polite brush-off. I was amazed when I received a very prompt reply - not only had Michael answered my questions, but along with his answers came a wealth of background information. His delight in his subject was immediately obvious, and it had me hooked on his beloved anthos from that moment on. Afterwards I wrote to him on many occasions seeking information, and his replies were always carefully written and immensely detailed. I very much regret that I never met Michael face-to-face; I had plans to do so last Summer, but Covid put an end to that. Nonetheless, through his generosity with his time and his matchless knowledge of his field, he was one of the people who nurtured and maintained my interest in the Diptera, and I shall always be grateful to him.

Judy Webb: I first met Michael in the Hope Dept of Entomology at the Oxford University Museum of Natural History in the early 2000s along with John Ismay and Adrian Pont. As a fly novice I had brought fly specimens caught in the grounds of Milham Ford School in Oxford where I was teaching Biology and trying to record all insect species as the site was subject to closure and planning application for housing. It was my first wildlife battle. All three experts helped me and Anthomyids amongst my catch were quickly identified for me and Michael later visited the school grounds, caught and identified more Anthomyid flies. I was so grateful for this help. I then found Michael and his wife Heather lived only 10 minutes walk away from me in Kidlington, and took to walking up there for sociable tea and chat about flies and life in general sometimes on a Sunday afternoon; before they moved down to Pond End, Pymore, in Dorset. Of course this move was good for them to be near their daughter, but I felt the loss of kind friends. I visited once in their new Dorset home. Sadly I never managed to have time to master identification of Anthomyids, despite Michael's keys and him telling me how easy they were if only you looked at the genitalia. I remember his enthusiasm and amazing drawing skill. One of the things I was able to do for him was make a special effort to sweep for Anthomyids on the DF summer field meeting to Aviemore in 2008. I also harvested Anthomyids from other Dipterists on the trip in order to pass them all to Michael. On the day we went up Cairngorm, Michael told me exactly where he wanted me to sweep – from the ski centre car park, all up the wet vegetated slopes under the chair lift to the mountain top, so I swept as much of it as I could and produced a fair number of flies. On examination of my accumulated catch when I returned home I remember his delight at finding 2 males of *Paraegle atrisquama* Ringd. from under that chair lift – at the time a very rare fly found previously only by Jon Cole and Ivan Perry in the UK.

Brian Robin Laurence 1928 to 2018



We learned belatedly this year of the death of another of the generation of dipterists born in the 1920s. Brian resigned from the Forum and other Societies in 2016 for health reasons. The news that he had died in 2018 came to us from June Holmes, archivist of the Natural History Society of Northumbria, who had received some archival material from his son Duncan. She asked if there was an obituary and I then learned through Brian's other son Raymond that one by John O'Sullivan had appeared in 2018, in the Bedfordshire Naturalist, the journal of the Bedfordshire Natural History Society.

Brian was born at St Albans, but soon moved to Luton in Bedfordshire, where his school years were spent and his interest in Diptera began. In 1946 he went to study zoology at University College, London. It was during a return visit to Bedfordshire in 2013 that he was interviewed about his life by John O'Sullivan and Alan Outen, and this formed the basis for the 2018 obituary. We learn from this that Brian had been introduced to natural history by his father, who provided him and his brother Donald with a brass microscope, with which they examined the organisms in pond water. He joined the Bedfordshire Natural History Society and wrote an article entitled Notes on Bedfordshire Diptera for the first issue of the Society's Journal in 1947. He had contributed notes to the entomological journals since 1944; after three notes on Orthoptera, publication on Diptera began in 1945, when he was aged 17, including a note published in that year on the soldierfly *Odontomyia argentata*. In 1987, he gave the Diptera that he had collected locally, from 1943 to 1956, to the Bedford Museum.

For his PhD, awarded in 1953, Brian was based at Rothamsted – the subject was the larvae developing in cow dung, and resulted in a series of articles on the associated Diptera, including the description of a lesser dung-fly new to science, *Philocoprella quadrispina*. While there he reared a psychodid from a rot-hole in lime, which Paul Freeman described in 1953 as *Telmatoscopus laurencei*. Brian's first job, as an assistant lecturer at Birkbeck College in London, was interrupted by National Service from 1953 to 1955. He was with the Royal Army Medical Corps, and was able to put his knowledge of Diptera to good use in teaching medical entomology to officers of the regiment at their college in Millbank. He also found time to pursue his interest in predation, on which he had been writing articles since 1947; while training at Catterick, he investigated predation by empids along a nearby stream, which was published in 1955. He told Roy Crossley that his tubes of specimens in spirit were carefully hidden to ensure they weren't found during kit inspections. He also took an interest in winter gnats (Trichoceridae), resulting in publications on their biology in 1956 and on identification in 1957.

In 1956, Brian joined the staff of the London School of Hygiene and Tropical Medicine, where he remained for 30 years. Teaching was structured to enable several months each year for research, both in the laboratory and overseas, and he was able to travel widely in the tropics. The main subject of his research was the biology of mosquitoes that were vectors of the tropical disease elephantiasis, and its causative organism the filarial nematode worm *Brugia malayi*. There were 55 publications from 1958 to 1991 related to this subject.

In 1979, having moved to an old house in Islington, he was surprised to find that the cave-dwelling fungus gnat *Speolepta leptogaster* was breeding on the walls of a coal cellar. The larvae were feeding on fungal spores and algae, and were preyed on by larvae of the keroplatid *Macrocera fasciata*. Observations on its biology continued until 1986, when he moved to Norwich. While there he identified the Sciaridae and Dolichopodidae collected in the survey of East Anglian wetlands by Andrew Foster and Deborah Procter, and his 1995 article on the Dolichopodidae added *Achalcus thalhammeri* to the British list. For the Sciaridae, he delved more deeply into their taxonomy. His slide-mounted Sciaridae were examined by Frank Menzel, and the records published in 2006 in our update of the British fauna; Brian's slides have been deposited at the Oxford University Museum. He also took part in a survey of the Diptera of Bradfield Woods in Suffolk, comparing different stages of the coppice rotation; the results appeared in Dipterists Digest in 1997.

Brian's later interest centred on the Diptera of the Northern Isles, where holiday visits with his wife Edna had begun in 1981; a list of his finds published in 1997 included the results of collecting there in the previous 15 years. In 1994, they moved to Berwick-upon-Tweed, where he complained that there were no insects. I enjoyed visiting him at Berwick on several occasions, a welcome break to the journey when I was regularly travelling to Edinburgh from 1998 onwards, and most recently in 2014 to pick up many of his books on Diptera that he had generously given to the Forum.

Brian's interest in Diptera was wide ranging and often changed in the course of his career. It has not been established where most of his collection is now located, so any information about that would be appreciated. A fuller obituary with a list of his publications will appear in Dipterists Digest. I thank Ray and Duncan Laurence, John O'Sullivan, June Holmes and John Stevenson for relevant information. The photo was taken in 2002.

Peter Chandler

Reference

O'Sullivan, J. 2018. Brian Robin Laurence 1928-2018. Bedfordshire Naturalist 73: 154-155

Meetings

Regional Groups

Northants Diptera Group

With this strange year, it is appropriate that the Diptera have also been unusual. It was a very slow start and numbers seemed to have been well down on previous years. However we have had a number of unusual records to encourage us.

The first was a message from Ron Fellows, a lepidopterist, who had been running a couple of traps in Fineshade Woods in the north of the county. He found what he initially thought was a micromoth he did not recognise and took it home to examine. He soon realised it was a fly and sent me a photo. I recognised it as *Rhamphomyia marginata* and arranged to collect the specimen from him.

Rhamphomyia marginata - photograph Ron Follows

He told me he had had a second specimen in his other trap but had not retained that. This was the first record for Northants, although a photo of one appeared on the front cover of Dipterists Digest a while ago, but that record never made it to me or to the Empid Recording Scheme. The photo had been taken in Wakerley Wood, just a couple of miles away. Nigel Jones, of the Empid Recording Scheme, said that this was a North-westerly range expansion for the species. Strangely, a few weeks later, I took the cranefly *Dactylolabis transversa* near a pond in Fineshade Wood. Checking the NBN Atlas, this represented a South-westerly range expansion and a county first. This extensive woodland is on a clay-capped limestone ridge and holds the site for the re-introduction of the Chequered Skipper butterfly in England.

Odontomyia ornata was recorded by Robin Gossage for the second year running at a site next to the River Nene and also recorded at Yardley Chase by Graham Warnes. The latter site also produced the Acrocerid *Ogcodes pallipes* (Jeff Blincow), only our second record for Northants. Kev Rowley found another Acrocerid – *Acrocera orbiculus* at the new nature reserve at Lilbourne.

This is a county first.

Ogcodes pallipes - photograph Jeff Blincow

Acrocera orbiculus - photograph Kev Rowley

During the winter Titchmarsh Local Nature Reserve was extensively flooded so we carried out a survey of the meadows hoping to find some floodplain species. The survey found two new cranefly species for the reserve: *Nigrotipula nigra* and *Tipula pierrei*.

John Showers

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

Reports

Summer Field Meeting 2021

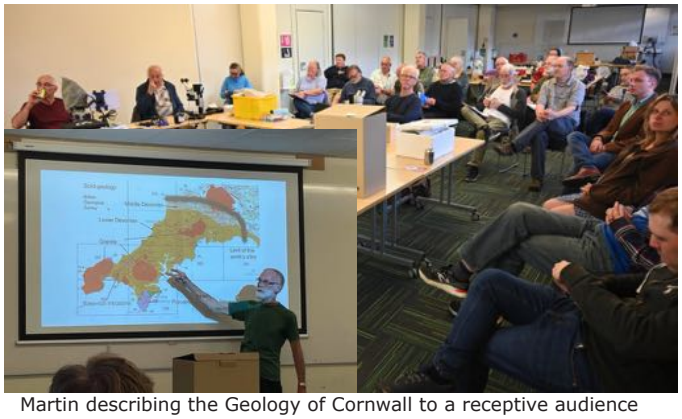
Falmouth

It had been a long time in the planning. A global pandemic had delayed the Dipterists from running around the Cornish countryside, recording flies, and consuming ice-creams and pasties but finally the time had come, and we were allowed out of our prospective homes to roam and record. Before we had even arrived a considerable amount of work had occurred and a special thank you to Jane Hewitt and Rob Wolton in organising the accommodation and permits, and Phil Brighton for sorting the finances. Never was there a more exciting email than the one containing the maps and spreadsheets of the many sites that we had permission to visit and collect from.

I was with the Natural History Museum, London (NHM) team and we had a specific task to undertake as we were collecting for the Darwin Tree of Life (DToL) project – an ambitious project to decipher the genomes of all the animals, plants and other eukaryotic life in the UK! Four of us from the NHM headed south armed not only with collecting kits but also a whole lot of chemicals, tubes, vials and a dry shipper that resembled a large dustbin (we had to cryofreeze the samples to preserve their DNA). We lodged and ate at the University of Exeter's Penryn Campus. The communal room where we all gathered to sort and show off our flies (and other insects) were large and spacious but there was sadly no bar for us on campus due to the COVID restrictions.

The Dry shipper for the DToL specimens. (*aka the blue loo - Ed*)

The first day of fieldwork was delayed due to the best of British summer weather. But it was not wasted. Roger Morris stepped in to give us two very informative lectures, one about the recording scheme data in trend analyses and the second on reasons for insect declines especially the impacts of extreme events on flies. Dipterists are not known for being quiet and a lively debate followed. Rob and Jane introduced us to the weeks proceedings and then Martin Drake followed with an introduction to the geology of Cornwall.



Martin describing the Geology of Cornwall to a receptive audience

Our first day in the field and once more we thought that it was going to be a washout, so I organised for our crew to collect at the EDEN project. Luckily, I know the Learning Curator, Dan Ryan, who organised for us to have access to the world-famous domes to collect in. But it didn't rain, in fact it was rather hot. Being in a tropical biome was very hot. Having spent a lot of the time collecting in the tropics it was rather unusual – all of the plants looked good but none of the usual insects. We did collect some stick insects and cockroaches though! Sometimes it's not about the collecting but the outreach. The public were very curious as to what we were doing – the inevitable question about are we collecting butterflies – of course not, we replied, we are collecting much better species! After we left the confines of the Eden Project we went on to Kings Wood. A woodland path running alongside the river with Dolis and hovers flirting in the dappled sunlight. Zoe was happy waddling around catching simuliid larvae.

Eden, ice creams and woodland trails.

Olga Sivell was in charge of our motley crew and coordinated the processing of the samples. Ryan Mitchell, Chris Raper and I were identifying and databasing the living flies, which were then passed to Zoe Adams and Olga to process. Thankfully we were not alone. Everyone was helping us by donating different insects, mostly flies, but whatever was able to have a name put to it, we processed it. The lovely thing about the DF trips is that there are many non-Dipterists who also know a fair amount about the lovely flies. Andrew Halsted professes to be a Hymenopterist (and many of us have competed in the Honey

Pot challenge) but he is also a very good Dipterist, and now the DToL has two Cecidomyiidae species - *Contarinia quinquenotata* and *Dasineura plicatrix* – thanks to his rummaging through the Penryn campus flower beds!

Day three and we were out and about proper. And first off, our group headed off with many of the others to Marazion Marsh (RSPB) where we were joined by RSPB assistant warden Amy Brocklehurst. It was a dull, overcast morning but still it was fun poking in and around the reeds and spotting Therevids. Next Amy, Chris, Ryan, Chris (Spilling) and I headed to the other side (no not Coleoptera) to the RSPB Reserve at Hayle (after a pasty stop) and spent some time sampling around the edge and on the mud flats. There was a resplendence of Leptogaster cylindrica elegantly sitting on the tall grasses for us to admire (and collect a few). The final destination for the lads (I was drinking tea with a friend) was Upton Towans Nature Reserve, CWT. Ryan caught both *Chrysotoxum cautum* and *C. elegans*, the latter being a scarce southern species.

A lovely time was had by most of the group on the day that we went to the Penhale Sands and Dunes (including an area owned by the MOD which Jon Cripps, Dune Ranger had organised for us to record at). After a confusing drive around a quite amazing holiday park (I use the term ironically, although Rob did comment that maybe we could hold a future meeting there!!) we parked up and headed across the dunes. My personal highlight of the trip was sweeping a *Villa modesta* – a new species of bee fly to me (and many of the folks on the trip) – an adorable little parasite if ever there was one. Another wonderful find was the therevid *Acrosathe annulata* (a highlight of Jane's) – both species liking their costal location. I may have squealed when Ryan swept both *Phthira pulicaria* and *Bombylius canescens*. We were joined that day by Will Hawkes (check out his work on migratory hoverflies https://tinyurl.com/7dm6mmtb) and both him and Ryan swept with glee (and I have never had so many bees shoved under my nose), catching and recording the biota of the dunes.

Penhale Dunes – *Villa modesta* (Image from Sue Taylor) and two happy entomologists.

The final days sampling for the DToL team was the beautiful Cliffs of Mullion Cove. It was a stunning day, and we spent most of the glorious sunshine playing, sorry collecting, in Mullion Quarry. A lovely site full of *Cordulegaster boltonii and Orthetrum coerulescens* as well as many large and charismatic diptera including the Net-winged snail killer *Pherbina coryleti.*

Views of Mullion Cove and Mullion Quarry.

Many other sites were visited by the other Dipterists with some unusual findings. There were 29 of us in all, and some day visitors and as a group we visited over 40 sites, with many habitats. At night I walked around the lab area peering into other folk's crystal boxes to see what fun things they had found. Martin Drake was especially happy as he had an extremely rare Doli - *Thripticus cuniatus* collected from the Penhale dunes – there are only 5 specimens of this species, and he is in the process of splitting it into two!

Martin Drake and his unusual Doli. The Crystal boxes filling up with flies.

A total of 308 specimens made it into the DToL bucket, a total of 194 unique taxa of which there were 89 species of Diptera! 25 species of spider, 32 species of beetle, 9 bugs and 22 Hymenoptera all fell in alongside this (as well as many other invertebrates). The obvious big hitting family were the Syrphids with 26 species recorded but as a lover of larger Brachycera I was very happy to see that 5 species of Asilidae, 3 species of Bombyliidae and 7 Stratiomyidae also made it to the list. To see more of what was recorded during the meeting please visit https://dipterists.org.uk/field-meetings and see the 600+ records have already been added to the Cornwall iRecord list.

Although there were some obvious absences (no craneflies or fungus gnats) the sampling was incredibly successful for the DToL project. And a very pleasant week spent with good flies, company and views (and some dam fine ice cream)

Erica McAlister

Other highlights

Mike Ashworth

Finding *Ctenophora pectinicornis* (Tipulidae) in the woodland at Kennall Vale (Cornwall Wildlife Trust). This Nationally Notable species is widespread in England and Wales but localised due to its requirement for old broadleaved woodland or orchards with dead and decaying wood.

Sharing a "Lispe experience" with Nigel Taylor. At a patch of bare sand next to a dune slack at Gwithian Green LNR, we spent some time watching large and small *Lispe* (Muscidae) flies running around on the sand. The larger flies IDed to *Lispe tentaculata*, in which the males have a remarkable finger-like protrusion on the fore tibiae. The smaller ones lacking any adornments on the legs were *Lispe nana*.

Other flies running around on the sand with a more erratic running motion and with a noticeable delta wing shape were later identified as *Periscepsia carbonaria* (Tachinidae), with a long petiole, bristles running all the way down the parafacialia and strongly darkened wings

a nice *Rhagio tringarius* photographed in the wild at Cot Valley

Where's Mousley? Can you trace John's path out of the maze at Glendurgan Gardens? [Photo D. Sumner]

He got out in time to win the Honeypot Challenge [Photo D. Sumner]

Forthcoming

Watch for announcements on our website. In particular, since some of them are to be held online, look for details of how to participate.

www.dipterists.org.uk/

Annual Meeting 2021

TBA November 2021

Annual General Meeting

In recognition of the uncertainty that remains around Covid-19 and in-person gatherings and bearing in mind the success of last year's meeting, committee has decided that Dipterists Day and the AGM should be held virtually again this year. We therefore need to conduct key constitutional AGM matters by this Bulletin notice. The key matters concerned are approval of the annual accounts and the (re)election of committee members and officers.

The **2020 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 2022**. 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 2022.

With regard to **(re)election of committee members,** with the exception of Stuart Ball, all committee members wish to remain on committee, and John Mousley has put himself forward for election as new member. Those committee members who hold officer posts are also willing to stand for (re)election to the posts they currently hold, with the exception that Erica McAlister is standing for the role of Chair (while continuing to act as Publicity Officer). If she is elected, I shall then become Vice-Chairman. Details are given below.

Please contact our Secretary Jane Hewitt and me **before 1st January 2022** 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 for succession planning.
2. If you wish to oppose the (re)election of an existing committee member.

If no committee positions are contested and there is no opposition to (re)election of those listed below, 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 2022.

Robert Wolton Chairman

List of committee members for (re)election

Officers

Chairman	Erica McAlister (proposed)
Vice Chairman	Robert Wolton (ex Chair)
Secretary	Jane Hewitt
Treasurer	Phil Brighton
Membership Secretary	John Showers
Indoor Meetings Secretary	Zoe Adams
Bulletin Editor	Darwyn Sumner
Assistant Bulletin Editor	Judy Webb
Digest Editor	Peter Chandler
Publicity Officer	Erica McAlister
Website Manager	Martin Harvey
Conservation Officer	Mark Welch
Training Coordinator	Marc Taylor

Ordinary Members for re-election

Tony Irwin John Mousley (proposed new committee member)

Ordinary members already elected (in 2021)

Victoria Burton, Matt Harrow, Chris Raper, Malcolm Smart

Spring Workshop 2022

Friday 11th to Sunday 13th February 2022

Identification workshop on British Craneflies (Diptera; Tipuloidea)

Pete Boardman & John Kramer

FSC **Preston Montford** https://www.field-studies-council.org/locations/prestonmontford/

A discount of £95 will still apply for Dipterists Forum members

£300 for single occupancy (then discount applied if applicable)

£275 for shared occupancy (then discount applied if applicable)

Zoe Adams

See Review of Alan Stubbs book "**British Craneflies**"

Summer Field Meeting 2022

East Anglia

We are hoping to hold the 2022 summer field meeting in East Anglia. The meeting will likely be held in early July, with our accommodation in Norwich at the University of East Anglia. Once arrangements have been confirmed, further details including meeting dates and booking information will be posted on our website.

Jane Hewitt, Secretary

Sciomyzidae & Phaeomyiidae

Sciomyzidae Recording Scheme

Newsletter 7 Autumn 2021

Founded June 1983 by Ian McLean

Salticella fasciata (Big-thighed snailkiller) Holme Dunes by Darwyn Sumner

Recording Scheme - News

Update

As co-organiser of this UK Recording Scheme, led by Ian McLean, I've received a good deal of information and data since I took on the role in 2008 (Bulletin 66). Though it has been 11 years since the last newsletter, the brief note on the scheme in DF Bulletin 91 was an indication to several of us that there was a need for a more detailed account. This 2021 update has contributions from myself, Matt Harrow and Steve Falk.

Identification Keys

Three books provide the backbone to European species identification:

Rozkošný R, 1984. The Sciomyzidae (Diptera) of Fennoscandia and Denmark.

Vala J-C, 1989. Diptères Sciomyzidae Euro-Méditerranéens.

Rivosecchi L, 1992. Diptera Sciomyzidae.

The above were used as the basis for a key of UK species (Sumner, 1998) and in a Dipterists Forum workshop (*idem*, 2004.) Workshops in later years too as people kept taking Sciomyzids for me to identify regardless of the main topic.

Stuart Ball and Ian McLean subsequently began work on a more definitive key, taking into account additions to the UK fauna and culminating in a 2014 workshop and key (Ball, 2017) This key, revised in early 2017, also contains distribution maps and full species descriptions and is available to registered Dipterists Forum members.

Both are workshop keys, the use of copyrighted material therein being acceptable for teaching purposes.

Darwyn Sumner (Scheme co-organiser)

Recording: UK

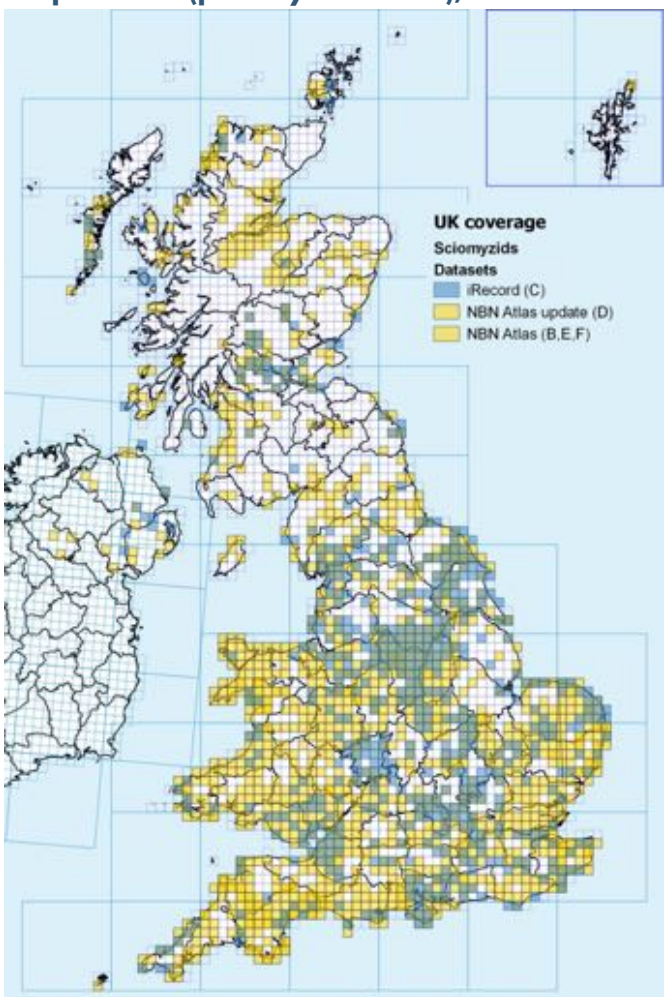
Summary of datasets

By publishing datasets to NBN Atlas, information regarding occurrences become available without restriction to all. In particular current distribution maps may be accessed through NBN Atlas. Whilst no Recording Scheme can undertake to

Coremacera marginata by Ian Andrews

Pteromicra angustipennis by Darwyn Sumner

Open Data (publicly available), March 2021



Status of records on NBN Atlas and on iRecord as of March 2021. The objective is to make all the records publicly accessible through NBN Atlas.

Yellow = NBN Atlas (30,299 which includes a recent Scheme batch of 6,530. Recent additions from DF Field Weeks and a further 883 Scheme update)

Blue = verified iRecord occurrences (2,884) - on their way to NBN Atlas

Green = where both overlap. **Grand total 34,543**

Contact us if you've any more or simply add them to iRecord.

always be up-to-the-minute with such uploads, typically they may catch up every couple of years or so. More frequently when arrangements are in place to allow verified iRecord occurrences to be fed directly into a scheme's Atlas dataset.

The following list indicates which batches of records exist, most of which may be found as Open Data on the NBN Atlas:

A. Pre-2007 occurrence records (Part 1) in the possession of Stuart Ball who liased with the scheme to collate these in Recorder 2002 and used them for analysis in the 2014 workshop and 2017 key where they are fully detailed.
B. Spreadsheets submitted to DS from 2007 to 2016 were processed and uploaded to NBN Atlas in 2021 as a partial dataset (identified on the Atlas as Part 2.) 6530 records
C. Verified iRecord submissions: scheduled to be added as a separate NBN Atlas dataset (request to BRC 19/03/2021)
D. Spreadsheet datasets submitted to the Recording Scheme (DS) since 2014: submitted for addition to B. 883 records
E. Older NBN datasets - from a variety of historic sources such as DF field weeks or agency records
F. Current surveys placed on the Atlas arising from LERC work, expeditions such as DF Field Weeks and others
G. iNaturalist. The NBN Atlas upload methodology is currently unclear but it presently only contains a handful of records, some of which have also been submitted through iRecord (C.) and to the Recording Scheme (D.)

The practise of publishing these datasets provides the means by which scheme organisers answer queries. To those using NBN Atlas for research, education and other purposes, the above list should give some indication as to how comprehensive your NBN Atlas search will be. Absent from your searches will be some of A. and all of G. at the time of writing, whilst C. & D. will be available when they have been fully processed.

Open Data: Maps & phenology in this newsletter use B., C., D., E., & F. These are to be found on NBN Atlas where you can generate your own maps.

Getting stuff identified

1. Use the galleries to get a rough idea - especially Steve Falk's at https://tinyurl.com/y3ndju78
2. If yours is an image then geotag it and post to iRecord or iNaturalist, both of which expect you to have some sort of idea of what it is.
3. Use the keys, then when you're certain, ensure the record is submitted to the Recording Scheme

A lot of them are hard to do from images alone. Run a filter on iNaturalist (Sciomyzidae|UK) and you'll see the easy ones plus a lot of *Tetanocera spp*. (which cannot be done from just pictures)

iRecord

iRecord submissions are the currently preferred method of sending records to the Recording Scheme. Though both of us are set up as verifiers, Matt Harrow carries out the bulk of the verifying on behalf of the scheme. It is planned that future Spreadsheets will be dealt with by uploading them there. A request was made of BRC to arrange for verified records on the BRC silo to be transferred to NBN Atlas under the title "Sciomyzid Recording Scheme - iRecord" and thus become Open Data. Look for your stuff there.

iNaturalistUK

Images posted here get checked occasionally, don't hold your breath though, some cannot be done from pictures. They are however scrutinised by overseas experts.

Darwyn Sumner

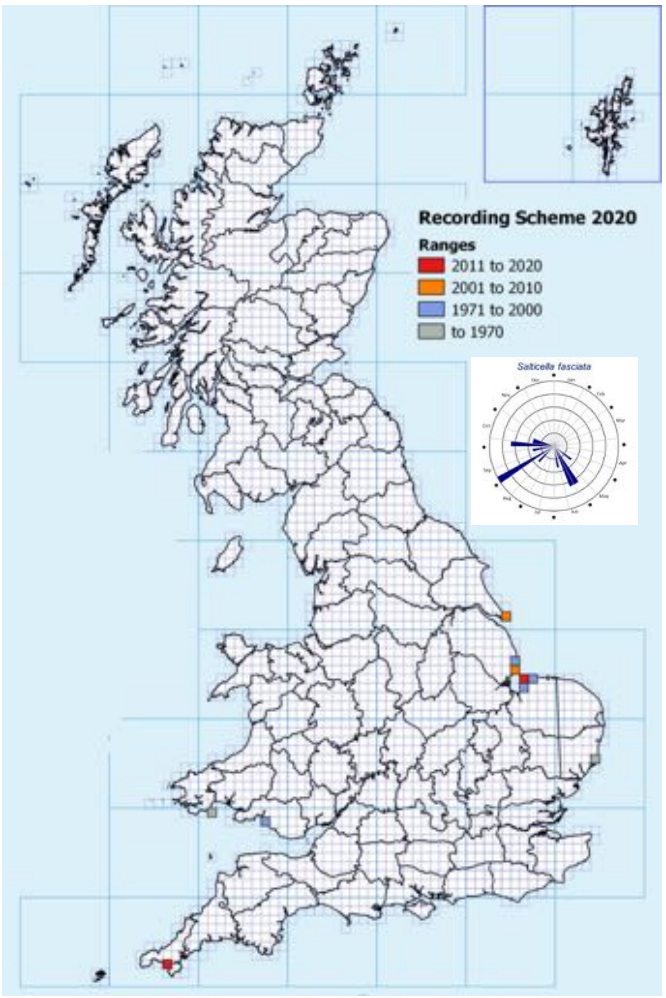
Species accounts

1. BAP species

Salticella fasciata distribution & phenology

This scheme's flagship species.

The only Sciomyzid amongst Dipterist Forum's BAP "adopt a species" is *Salticella fasciata* (Bulletin 65, 2008.) Accordingly this is one of the species to which we pay special attention. It gets a brief note in Falk's IUCN account (2017) who refers it to Shirt, 1987 so it's only got the old Red Data Book status. From the data we have now (35 records), we can assign it an IUCN category.



The two pre-1970 sites are Tenby and Aldeburgh. Sand-dune systems are present at the former (Penally Dunes), for the latter the location is imprecise. The Glamorganshire site, Kenfig Dunes is very extensive and has been searched unsuccesfully by MH. The core site in the east is Holme Dunes in Norfolk. Whilst this system transitions to salt marsh further east, to the west coastal defences may have harmed the habitat by stabilising dunes; Snettisham has been searched for many years without success. The metapopulation here clearly disperses across the Wash though there have been no recent records for the Lincolnshire coast (Skegness, Gibraltar Point to Spurn Head).

The Cornish site is Loe Bar, first recorded there in 2005.

Salticella fasciata at Loe Bar in Cornwall, September 2020 [Matt Harrow]

Images from France posted on iNaturalist by Jean Marc Ruiz

Darwyn Sumner (BAP adopter, 2008)

2. Most recognisable species

The four species on pages 4 & 5 are the most photographed + identifiable as indicated by iNaturalist submissions. Other species such as *Tetanocera* may be the most photographed and though attempts have been made (Bulletin 90) they cannot be identified from images alone.

3. Selected species

The six species on page 6 are a random selection. All photographs by Steve Falk, maps and phenology by D. Sumner from Open Data.

For the 2017 figures on the remaining species see Ball, 2017.

Status

A simplified method of assessing IUCN status was discussed in Bulletin 83 (p9). The actual method is quite complex (see their 2012 handbook) but the availablity of good data regarding occurrences throughout well-defined time periods is an excellent starting point. By separating into decade groups, occurrence quantities can be used to approximately assign IUCN categories (Sumner, 2017) If unacceptable for formal designations the method is at least capable of detecting broad trends, even if that trend is obscured by variations in recording effort and chance encounters of scarcer species. The following table is derived from an analysis of **Open Data** on 11 selected species.

The last status assessment for Sciomyzidae in the UK was in Falk, 1992. They were not included in the later 2016 review (Falk et al. 2016) which assessed many other Acalypterates. This latter document however provided information as to how provisional regional IUCN categories may be assigned.

Area of occupancy

Area of occupancy is but one of several formal criteria used to determine Red List Categories. A useful starting point however is when Open Data provides that information in the form of "occupied grid squares" which can be determined through GIS (as used to produce the maps) as follows:

Taxon	Pre 2001	2001 to 2010	2011 to 2020	Status
	number of unique hectads (10km squares)			[Falk, 1992]
Salticella fasciata	10	4	2	[vulnerable]
Coremacera marginata	101	137	265	Least Concern (LC)
Trypetoptera punctulata	144	113	121	Least Concern (LC)
Sepedon sphegea	145	87	122	Least Concern (LC)
Limnia unguicornis	125	145	127	Least Concern (LC)
Dichetophora obliterata	35	35	33	
Dictya umbrarum	34	14	16	[notable]
Ectinocera borealis	3	5	2	[rare] → vulnerable
Elgiva cucularia	89	50	35	
Hydromya dorsalis	216	116	110	Least Concern (LC)
Psacadina zernyi	12	13	9	[vulnerable] → near threatened

In a considerable oversimplification of the guidelines, taxa may be considered **Critically Endangered** if the population size reduction is ≥90% over a previous period of 10 years, **Endangered** ≥70% and **Vulnerable** ≥50%. A full assessment would require a detailed study of all the criteria (and more data than that available through Open Data alone) but the AO figures above suggest that both *Salticella fasciata* and *Ectinocera borealis* may be categorised as **Vulnerable** and that *Psacadina zernyi* is no longer within those three threatened categories but may qualify as **Near Threatened**.

The above is a small sample based upon an as yet incomplete set of data. The formal IUCN categories for the Sciomyzidae are scheduled to be fully reassessed in 2022.

Steve Falk discusses the availability of records in each of his papers on the subject of status. The emergence and subsequent cooperation of the Recording Schemes was key to the work then, the emergence and population of NBN Atlas by those Schemes with Open Data is key now.

Coremacera marginata distribution & phenology

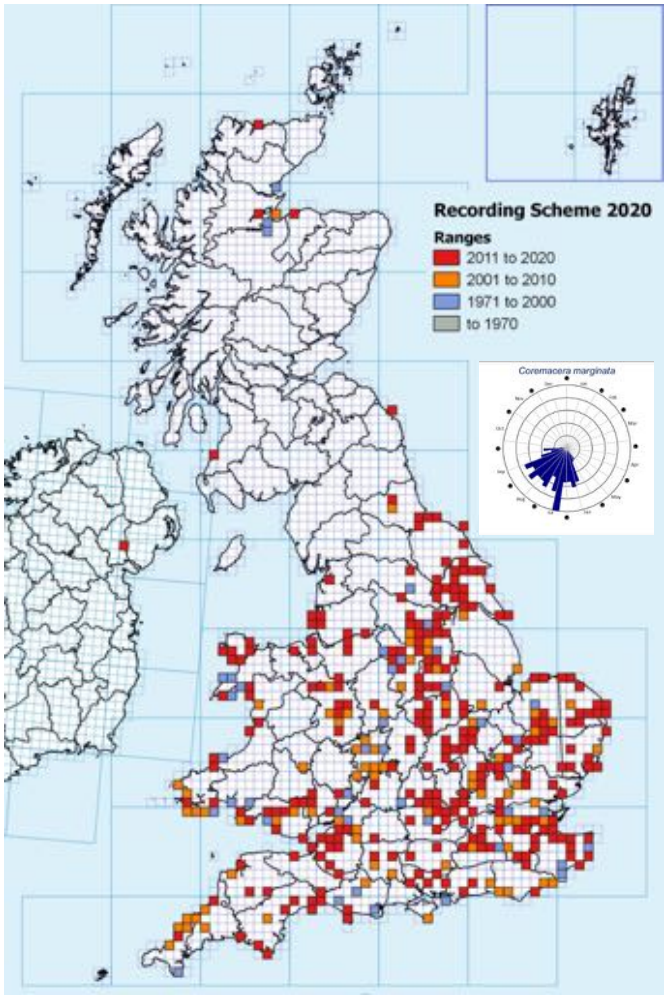


Image by Steve Falk (https://tinyurl.com/3j565ca6)

Trypetoptera punctulata distribution & phenology

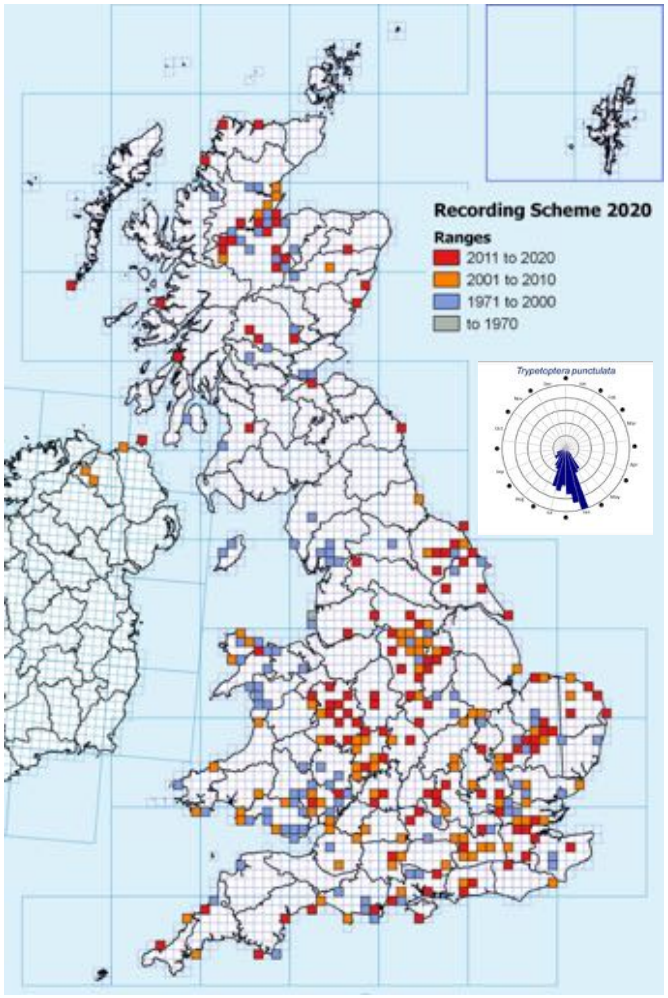
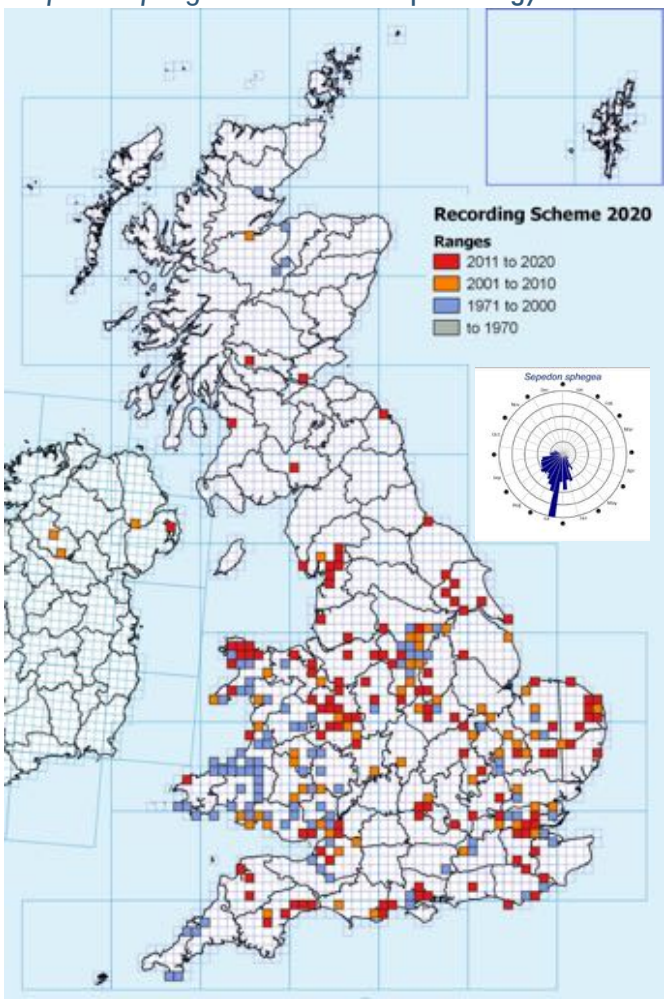


Image by Steve Falk (https://tinyurl.com/8f52pvrz)

Sepedon sphegea distribution & phenology



Limnia unguicornis distribution & phenology

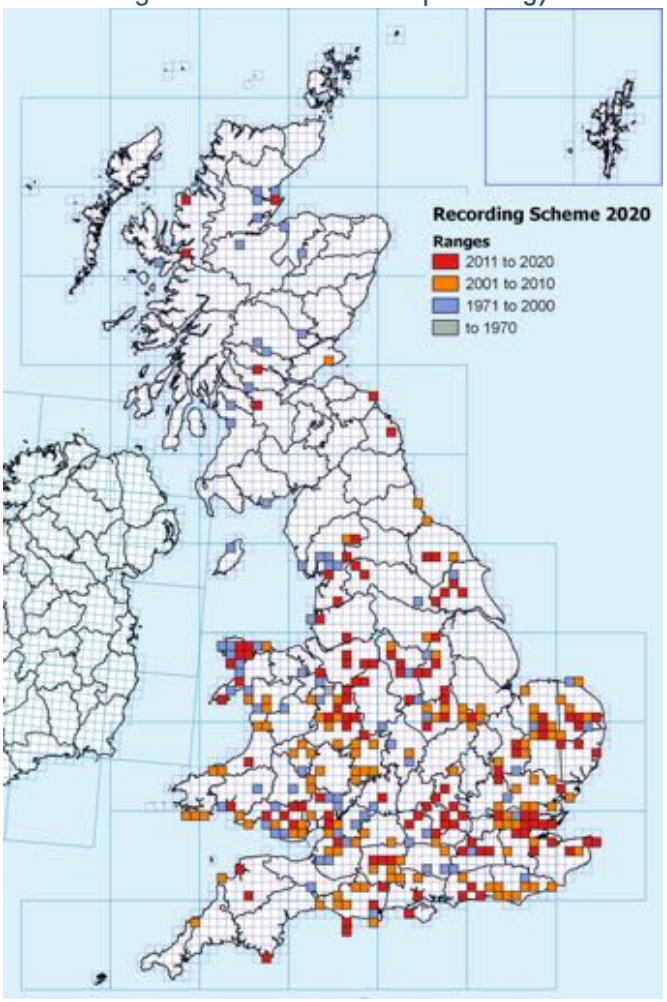
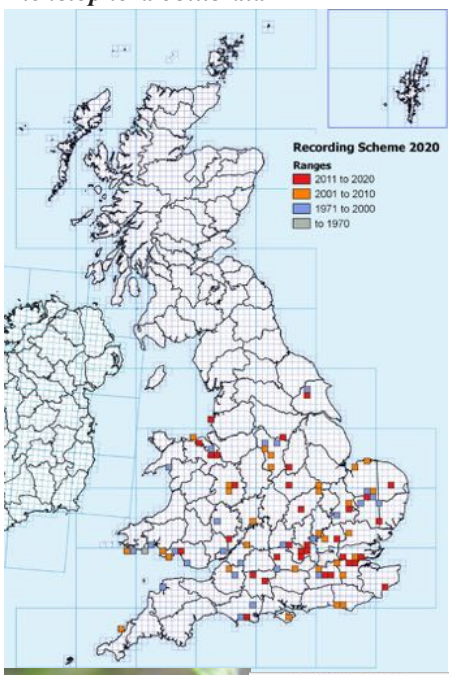
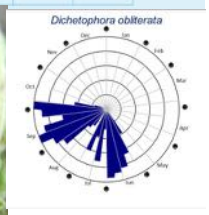


Image by Steve Falk (https://tinyurl.com/ch99fm29)

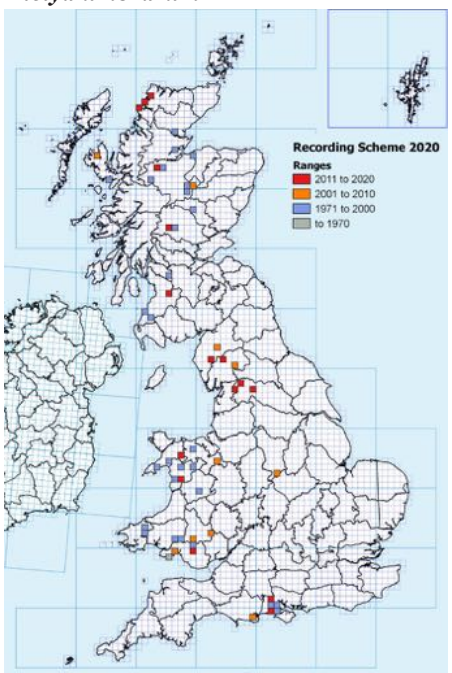
Image by Steve Falk (https://tinyurl.com/wv7mkrw5)

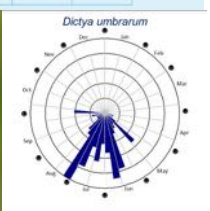
Dichetophora obliterata



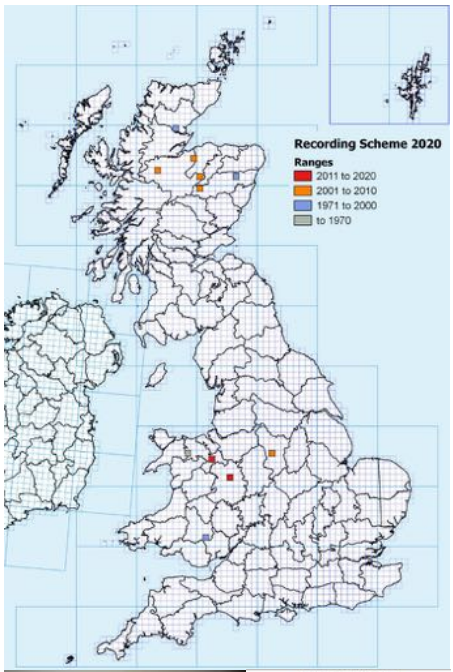


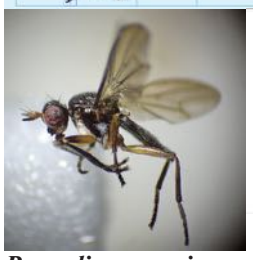
Dictya umbrarum

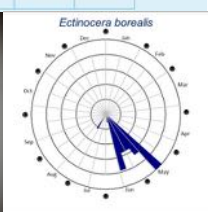




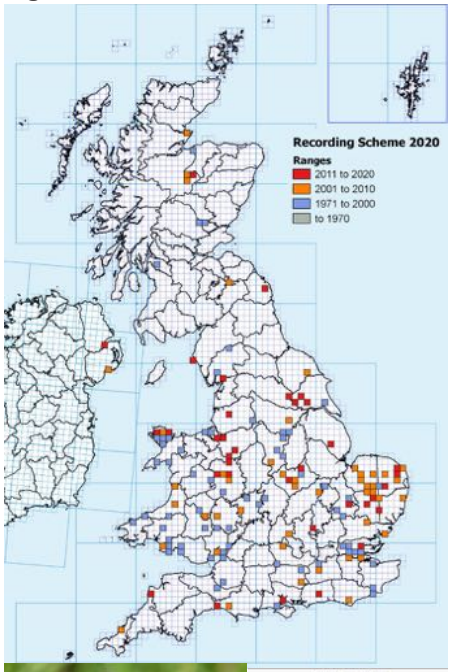
Ectinocera borealis



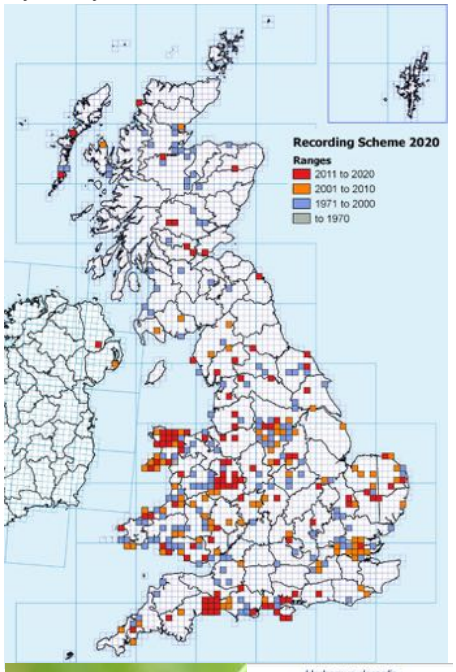


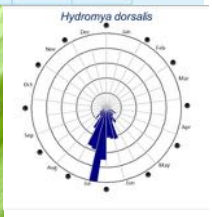


Elgiva cucularia

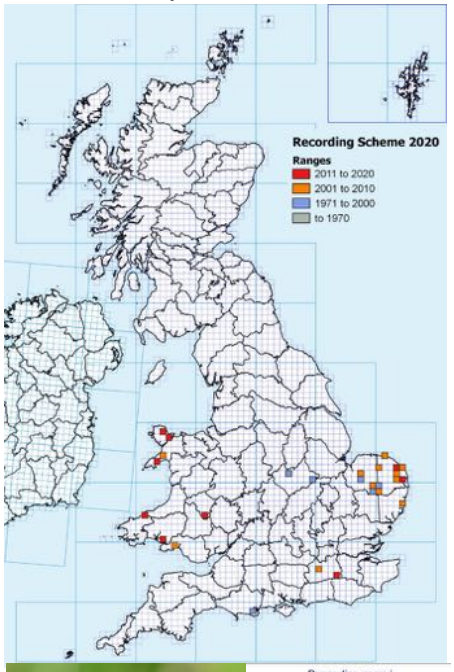


Hydromya dorsalis





Psacadina zernyi



Recording: Europe

iNaturalist project

The above is the header of the opening page of an iNaturalist project set up in 2020 https://www.inaturalist.org/projects/european-sciomyzids

Basically it is just a filter on a taxonomic group(s) plus a defined region (Pan-Europe). To that was added a header image and a logo together with some descriptive text.

Once set up it searches the entire iNaturalist database for records conforming to that filter and presents some statistics. At the time it was set up there were <1,273 observations, rising as follows by June 2021:

- Observations 1,435
- Species 55
- Identifiers 209
- Observers 617
- Members 4

In addition to showing the latest submitted images it also lists the people with the **most observations** and the **most species** plus the **most observed species**, which were:

- *Coremacera marginata*
- *Trypetoptera punctulata*
- *Euthycera cribrata (not UK)*
- *Sepedon sphegea*
- *Limnia ungicornis*

The project is not managed, though observations are checked by European dipterists.

Did the project encourage more recording? Possibly it did for a small handful of recorders encouraged by having their identifications confirmed or by there being a **gallery of images** of the group on the project's page.

The figures include many unverified records, many are first time identifications so unless the original contributor confirms an ID then many remain unconfirmed. This would be easily resolved by some form of collaboration, easily implemented by joining the project as a member and looking for unconfirmed ("needs ID") records:

Scratchpad site

Begun by Jonas Mortelmans http://sciomyzidae.myspecies.info/ this is currently unpopulated in respect of taxa. Ambitious in geographic scope the site has not been worked upon since 2015. A fresh start for UK or Europe may be called for.

Jonas is active on iNaturalist however where he is the top identifier by far. He gives his interests as "Sciomyzidae - snailkilling flies" nothing else.

UK Sciomyzid Galleries

Popular subjects amongst many photographers, you'll find Malcolm Storey's focus-stacked pictures on Bioimages at https://tinyurl.com/nbzdzhar and on several Flickr sites such as the regionally based one of Ian Andrews.

The most comprehensive UK collection is that of Steve Falk at https://tinyurl.com/y3ndju78 who additionally provides identification tips and habitat pictures.

If you've a good image organiser at home (e.g. iMatch) then there's nothing to stop you downloading your own personal set to help you identify them, they're all either CC-BY or CC-BY-NC and have been uploaded by these photographers for that very purpose.

Publications

Keys

Ball, S. G. 2017. Sciomyzidae (Diptera).

Newsletters

The previous 6 newsletters are available at:
http://www.micropezids.myspecies.info/node/344#Sciomyzidae

References

Falk, S. J. 1992. A review of the scarce and threatened flies of Great Britain, Res. Surv. Nat. Conserv. Nature Conservancy Council, Peterborough.

Falk, S. J., J. W. Ismay, and P. J. Chandler. 2016. A Provisional Assessment of the Status of Acalyptratae flies in the UK, Nat. Engl.

IUCN. 2012. IUCN Red List Categories and Criteria, IUCN Bull. Gland, Switzerland.

Sumner DP, 2017. Status assessment. Bulletin of the Dipterists Forum 83, 9.

Sumner, D. P. 2018. Phenology and Polar Area Charts (Fantail Phenology). Dipterists Forum Rep. C 5: 8.

UK Sciomyzid Checklist

The following list is taken from the current UKSI certified by Chris Raper as current in late 2020. For spreadsheet use download his UKSI list and use that to record, the terms will then match up to those recognisable by NBN Atlas.

Stuart Ball treats the checklist in more detail and more taxonomically correct, the following is simply alphabetical. Stuart provides comprehensive details for each taxon; note that items on his Contents pages (1 to 3) are interactive, no need to scroll through the entire 150 pages.

Vernacular names have been assigned by Steve Falk, to discover these, go to his Flickr site. He missed a chance for a theme here, I'd have gone for famous detectives and murderers.

Highlighted taxa in the following list are hyperlinked to Steve Falk's Flickr species accounts where you can view more images of them, see identification tips and habitats and links to NBN Atlas distributions:

Sciomyzidae

Anticheta	**Haliday, 1838**	
Anticheta analis	(Meigen, 1830)	Rare
Anticheta atriseta	(Loew, 1849)	
Anticheta brevipennis	(Zetterstedt, 1846)	Vulnerable
Anticheta obliviosa	Enderlein, 1939	Vulnerable
Colobaea	**Zetterstedt, 1837**	
Colobaea bifasciella	(Fallén, 1820)	Notable
Colobaea distincta	(Meigen, 1830)	Notable
Colobaea pectoralis	(Zetterstedt, 1847)	Vulnerable
Colobaea punctata	(Lundbeck, 1923)	Notable
Coremacera	**Rondani, 1856**	
Coremacera marginata	(Fabricius, 1775)	
Dichetophora	**Rondani, 1868**	
Dichetophora finlandica	Verbeke, 1964	Rare
Dichetophora obliterata	(Fabricius, 1805)	
Dictya	**Meigen, 1803**	
Dictya umbrarum	(Linnaeus, 1758)	Notable
Ditaeniella	**Sack, 1939**	
Ditaeniella grisescens	(Meigen, 1830)	Notable
Ectinocera	**Zetterstedt, [1838]**	
Ectinocera borealis	Zetterstedt, [1838]	Rare
Elgiva	**Meigen, 1838**	
Elgiva cucularia	(Linnaeus, 1767)	
Elgiva solicita	(Harris, [1780])	
Euthycera	**Latreille, 1829**	
Euthycera fumigata	(Scopoli, 1763)	
Hydromya	**Robineau-Desvoidy, 1830**	
Hydromya dorsalis	(Fabricius, 1775)	
Ilione	**Haliday in Curtis, 1837**	
Ilione albiseta	(Scopoli, 1763)	
Ilione lineata	(Fallén, 1820)	
Limnia	**Robineau-Desvoidy, 1830**	
Limnia paludicola	Elberg, 1965	
Limnia unguicornis	(Scopoli, 1763)	
Pherbellia	**Robineau-Desvoidy, 1830**	
Pherbellia albocostata	(Fallén, 1820)	
Pherbellia annulipes	(Zetterstedt, 1846)	Notable
Pherbellia argyra	Verbeke, 1967	Vulnerable
Pherbellia brunnipes	(Meigen, 1838)	Notable
Pherbellia cinerella	(Fallén, 1820)	
Pherbellia dorsata	(Zetterstedt, 1846)	Notable
Pherbellia dubia	(Fallén, 1820)	
Pherbellia goberti	(Pandellé, 1902)	
Pherbellia griseola	(Fallén, 1820)	Notable
Pherbellia knutsoni	Verbeke, 1967	Rare
Pherbellia nana	(Fallén, 1820)	Notable
Pherbellia pallidiventris	(Fallén, 1820)	
Pherbellia punctata	(Fabricius)	
Pherbellia rozkosnyi	Verbeke, 1967	
Pherbellia schoenherri	(Fallén, 1826)	
Pherbellia scutellaris	(von Roser, 1840)	
Pherbellia sordida	(Hendel, 1902)	
Pherbellia stackelbergi	Elberg, 1965	
Pherbellia ventralis	(Fallén, 1820)	
Pherbina	**Robineau-Desvoidy, 1830**	
Pherbina coryleti	(Scopoli, 1763)	
Psacadina	**Enderlein, 1939**	
Psacadina verbekei	Rozkosný in Knutson Rozkosný & Berg, 1975	Notable
Psacadina vittigera	(Schiner, 1864)	Rare
Psacadina zernyi	(Mayer, 1953)	Vulnerable
Pteromicra	**Lioy, 1864**	
Pteromicra angustipennis	(Staeger, 1845)	
Pteromicra glabricula	(Fallén, 1820)	Notable
Pteromicra leucopeza	(Meigen, 1830)	Vulnerable
Pteromicra pectorosa	(Hendel, 1902)	Vulnerable
Renocera	**Hendel, 1900**	
Renocera pallida	(Fallén, 1820)	
Renocera striata	(Meigen, 1830)	Notable
Renocera stroblii	Hendel, 1900	
Salticella	**Robineau-Desvoidy, 1830**	
Salticella fasciata	(Meigen, 1830)	Vulnerable
Sciomyza	**Fallén, 1820**	
Sciomyza dryomyzina	Zetterstedt, 1846	Vulnerable
Sciomyza simplex	Fallén, 1820	Notable
Sciomyza testacea	Macquart, 1835	
Sepedon	**Latreille, 1804**	
Sepedon sphegea	(Fabricius, 1775)	
Sepedon spinipes	(Scopoli, 1763)	
Tetanocera	**Duméril, 1800**	
Tetanocera arrogans	Meigen, 1830	
Tetanocera elata	(Fabricius, 1781)	
Tetanocera ferruginea	Fallén, 1820	
Tetanocera freyi	Stackelberg, 1963	Rare
Tetanocera fuscinervis	(Zetterstedt, [1838])	
Tetanocera hyalipennis	von Roser, 1840	
Tetanocera montana	Day, 1881	
Tetanocera phyllophora	Melander, 1920	Notable
Tetanocera punctifrons	Rondani, 1868	Notable
Tetanocera robusta	Loew, 1847	
Tetanocera silvatica	Meigen, 1830	
Tetanura	**Fallén, 1820**	
Tetanura pallidiventris	Fallén, 1820	
Trypetoptera	**Hendel, 1900**	
Trypetoptera punctulata	(Scopoli, 1763)	

Phaeomyiidae

Pelidnoptera	**Rondani, 1856**	
Pelidnoptera fuscipennis	(Meigen, 1830)	
Pelidnoptera nigripennis	(Fabricius, 1794)	Notable

Hoverfly Newsletter
Number 70
Autumn 2021
ISSN 1358-5029

Readers will recall that **Hoverfly Newsletter No. 69** was included in the Spring 2021 Dipterists Forum Bulletin as an abridged version due to the bulletin's space limitations, but that a full 17 page version was available as a pdf. on the UK Hoverfly Facebook group or could be obtained from Roger Morris or me. If anyone has not seen the full version please contact me. In the case of the present issue the full newsletter is included with the bulletin, but authors should be aware that an 8 page limit still applies and that in future if publishable copy exceeds that there may again have to be an abridgement of the full newsletter.

Copy for **Hoverfly Newsletter No. 71** (which is expected to be issued with the Spring 2022 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 20th November 2021. Given the size limitations it may be worthwhile to send your articles in good time to ensure that they are circulated with the bulletin.

The hoverfly illustrated at the top right of this page is a *Scaeva pyrastri* larva.

Postponement of the 11th International Symposium on Syrphidae

Gabriel Neve (via Jon Heal)

We have just held a meeting of the Scientific Committee of the 11th International Symposium on Syrphidae. Due to the present restrictions on travel for delegates, the Committee has decided to postpone the Symposium to 2022

We shall assess the situation in Autumn 2021 and then decide how to proceed. In the meantime registration of interest remains open.

HOVERFLY RECORDING SCHEME UPDATE: Autumn 2021

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

What a strange spring this has been; or is it the new normality? Compared with recent years, spring started a lot later, and yet modern harbingers started to emerge when they might be expected to. For example, *Epistrophe eligans* still featured in the data for early March. April was confusing, with very cold nights that undoubtedly suppressed some hoverfly activity, and yet daytime temperatures in many places were sufficient to promote insect activity.

After excessive rainfall in January there were the makings of a serious drought in March and April, but any such concerns were blown away by a cold, wet May. There were then have been several extremely warm days in early June. These many contradictions meant that the start of 2021 has not seen the flood of interesting records that sometimes happens. Indeed, the over-riding cry from many recorders has been 'where are the hoverflies?'

Can we lay the blame at the door of the weather in 2021 or should we perhaps look back to some of the events in 2020? The wonderful warm sunny spring will have been beneficial to some species, but possibly not to aphidophagous species that depend upon wetter conditions. Furthermore, the heatwave of late July and early August may have had devastating consequences

for some species, especially those whose larvae develop in damp or humid habitats.

Disentangling the effects of the weather over two years is a minefield and as yet we don't have the tools to do so. This problem has much wider ramifications. If insect numbers are low, then the entire food chain that depends upon them will also be affected. In south-east England the problem seems to be especially acute. RM, for example, has found that visits to good sites in potentially productive conditions has been rewarded with at best fleeting glimpses of an occasional hoverfly!

There have been bright spots, however. Members of the UK Hoverflies Facebook page have been regaled with some excellent depictions of *Microdon devius* from Norfolk (Vanna Bartlett), *Caliprobola speciosa* from the New Forest (Colin Easton) and *Mallota cimbiciformis* at Gamlingay Wood (Vic Brown). There have also been nice finds of *Callicera rufa* at Formby (Pete Kinsella) and *Doros profuges* at Yealand Storrs (Mark Nightingale) and Martin Down (Sharon Towning). There has been a sprinkling of 'regulars' too such as eggs and larvae of *Parasyrphus nigritarsis* and larvae and puparia of *Microdon mutabilis* as well as several of adult *Microdon* that may be *M. myrmicae*. Hopefully, by the time we write the next update there will have been a flush of interesting records to report.

Database update

In March 2020, we hit a major problem – our version of Recorder (Rec 2002) was full. We could not upload some 70k records from iRecord and had to use a new system. Stuart duly installed Recorder 6 and immediately discovered lots of potential problems involved in migrating the data across! It took a very long while to resolve some of them and also to re-write his routines used to extract and analyse data. The problems were finally resolved in early 2021 and in February Stuart started the gargantuan problem of a backlog of data to import (approaching 100 Excel files plus several Recorder downloads, plus, of course the huge iRecord file that crashed the system). Most of this work was completed by the end of February and we were able to provide some feedback to Facebook group members. The results have been dramatic.

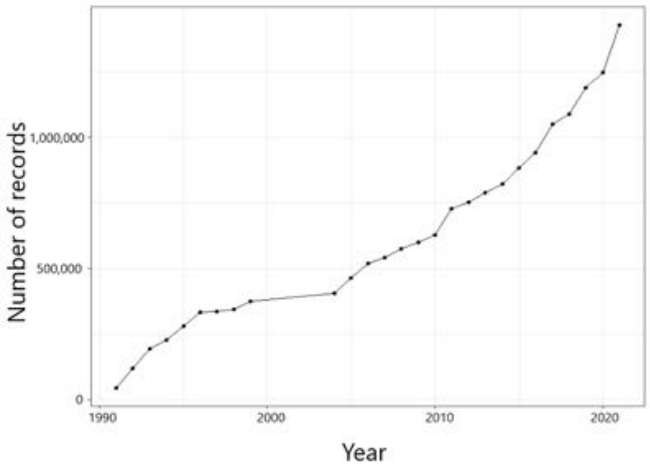


Figure 1. Growth of the HRS dataset since 1991.

The most obvious change has been the numbers of records for 2020 and 2021, both of which have gone beyond 80,000 records. This marks a major step-change in the level of hoverfly recording in Britain. Up until around 2010, the numbers of records submitted to the HRS each year ranged from the high teens to around 30,000 records, averaging around 20,000 records, despite the huge effort we made to train new recorders. That effort has, of course, paid dividends, because we now have a new cohort of contributors who will tackle difficult taxa, replacing the first generation who did so much to make the HRS a reality. But, as can be seen in figure 2, a shift to interactive media and photography has made it possible to record far more widely but somewhat less comprehensively.

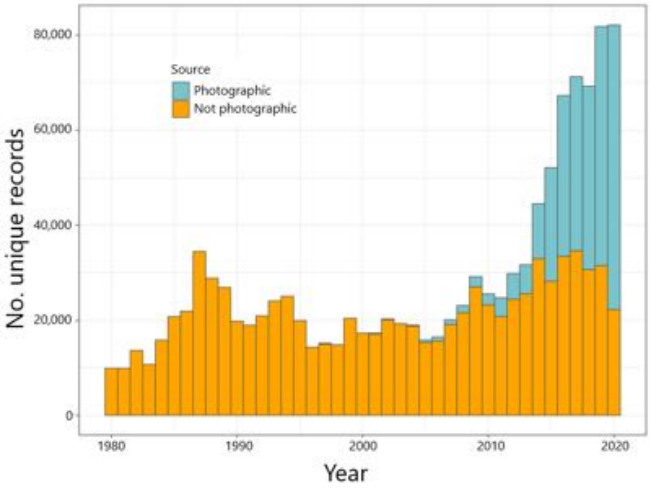


Figure 2. The numbers of unique records for each year since 1980, illustrating the change in recorder methods. We cannot be certain that those records listed as 'not photographic' do not originate as photographs, as many of those data do not contain indications of methods used.

This change in recorder activity provides a great opportunity to look at data in new ways, especially to think about some of the reasons why the abundance of insects is changing.

Hoverflies and climate change

Are we witnessing a dramatic crash in hoverfly abundance? Incoming data this year suggests that this may indeed be what is happening, especially in south-east England. Many observers (including RM) have found it very difficult to do any meaningful recording and data from the Facebook group tends to support this observation (figure 3).

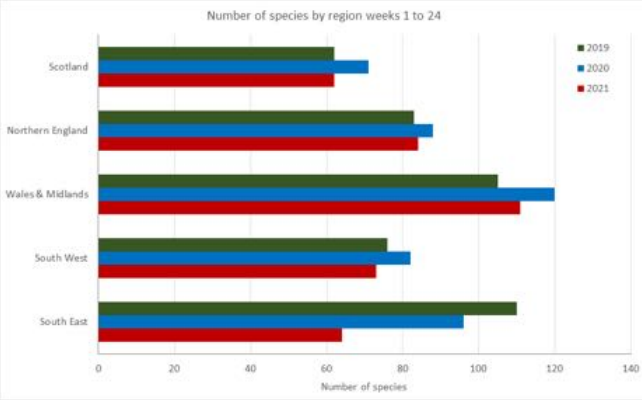


Figure 3. Numbers of species recorded from different regions until the end of week 24 (13 June 2021).

Unfortunately, we cannot place a great deal of confidence on one set of opportunistic data, as there are many possible reasons for the apparent lack of hoverfly diversity. The wet, cool May will not have helped recording, even if there were hoverflies to record! A more detailed picture is needed, but data-gathering is time-consuming, costly and unlikely to yield anything meaningful in much less than ten years.

In the absence of systematically collected data, we need to think about monitoring a suite of species that everybody can recognise and that will shine a light on what is going on. We also need to develop a network of people who would be willing to make such observations. The latter is likely to be the big stumbling block. In the past we have tried to get a garden hoverfly scheme off the ground, but, sadly, have never managed to generate enough interest to make it work. We do have a 'de facto' scheme as many members of the UK Hoverflies Facebook group regularly record from their garden or favourite local 'site'.

In addition to data, we also need to develop suitable analytical techniques. Occupancy modelling has been the favoured method for as much as a decade. It does highlight some trends but analysis by Stuart has demonstrated that the models are very sensitive to the types of records that are used. Sadly, it has not been possible to publish any of this work as yet.

We suspect that it will be necessary to select a suite of species that meet specific criteria of identifiability and ecological sensitivity to tell the story and highlight possible mechanisms for the losses that are becoming apparent. This process is in hand and could be an exciting line of research. There will be more on this issue in future updates once we have developed the relationships we are exploring with several Universities and research bodies.

Turning anecdote into data

At least some of us are having a very hard time this year recording both in gardens and in the wider countryside. I think the most pronounced problems are in south-east England but everywhere is somewhat down on other years. Why? Well, the truth is that we don't know but we can make some informed judgements. Climate change tops the list as far as I am concerned – not overall warming but extreme events. This year we have seen prolonged cold and dry weather in March/April, and extreme rain in May; last year there was a profound heatwave and very low soil moisture in August.

Making links between the data we do have and climate/weather is extremely difficult, not least because we have very poor ways of capturing nil returns. So, what we have to work with is presence-only. In that analysis we cannot take any account of those people who went round the garden (or patch) and saw absolutely nothing. Somehow, we need to rectify that problem. I am wondering whether it would be possible to create an on-line facility that can capture some very basic data: Date, time of day, location, grid ref, time spent looking, gross numbers of hoverflies seen. We would probably need to retain other data collection mechanisms for full ID but that might also be dealt with in due course.

It strikes me that this might be a project that somebody might like to take on? Maybe there is someone needing a project for their degree? Doing some design work for improving data capture to try to pick up the signals of climate change could be very important and instructive. Alternatively, maybe there is somebody who has already done such work and would have ideas. Or, perhaps this is something that we should be pushing with BRC?

RM is currently exploring ways of raising this profile with several research bodies so we may make progress there, but in the meantime perhaps this is something that we could start to discuss? I think there are two separate issues:

- Design of the platform AFTER some consideration by our statistically minded members.
- The degree to which this approach might appeal to active members, especially those who would like to be doing something towards finding answers to the biggest question we currently face:

How do we translate anecdotal observations into hard data?

My journal of the pandemic year : the biology of two *Eristalis* species made clearer in 2020

Jon Heal
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At least when I was persuaded by a global pandemic to spend several months in Spring and Summer 2020 sitting in my garden there was some good fortune in it as well. The weather stayed fine for weeks on end, and the very welcome reduction in car traffic on nearby roads meant that a more than usual diversity of insects reached my garden. In particular my specialist genus of *Eristalis* had a field day and gave me a chance to continue observations on their mate-locating behaviour. My article in Hoverfly Newsletter No. 67 (Spring 2020) compared *Eristalis tenax* with *E. nemorum*.

My garden is a conventional one at the back of a Victorian terraced house with a south-facing lawn surrounded by various flower beds, with a *Buddleia* dominating one end and a declining *Forsythia* bush getting smothered with holly and ivy at the other end. It is a "wildlife garden" and my main contribution is pruning when the bushes get too dense.

The observations on *Eristalis pertinax* were mostly for the two months from 21 March to 21 May. On most days I observed one or more males, frequently hovering but not always. Females were seen less often until May when they often found something to attract them in my kitchen drains.

These were a spring generation of adults developed from overwintering larvae which had pupated as the months get warmer. Summer generations follow until autumn females lay eggs that are destined to produce diapausing larvae.

Males are not early starters. Male hovering was most often noted from 10.30am to 2.30pm BST. Hovering is a high energy activity which mostly waited for the morning to warm up before it began. The first males to be seen were sitting on leafy bushes and basking in the sun. They are then seen darting out at passing insects, which can then lead to a perch-dart-hover strategy, before males moved out from the bushes to hover over the lawn. The advantage of hovering is that the male is more likely to catch a passing insect than if it flies out from a standing start.

First, the fallacies. Males are not hovering motionless" in space. Daily observations made it clear that they never are in one spot for more than a few seconds. They usually changed position before I could count to ten, in any case tending to drift away from the first location, although males are still quite able to hold one position while changing direction by 180 degrees. Changes of position are often caused by the distraction of other insects' movement, but not always, as it can also be spontaneous.

There are no territories. The hovering position is a lookout-point. I could have up to three males hovering at the same time over quite a small lawn, as long as they were facing away from each other. Although I did have single males who kept up their hovering for an hour or so, it seemed they were just using a good spot to see passing insects, which naturally changed as the direction of the sun moved round during the day.

As for success, I saw none. Frequently a hovering male would chase after another insect, but mostly the one whose thorax he grabbed was another male. Somebody with a slow motion camera might put me right, but it seemed as if the victim stopped beating its wings at which point the pursuer let go.

Fewer female *E. pertinax* were seen in the garden at first. On 10 April, and then more frequently into May, I started to record a very noticeable low buzzing flight in the back yard around the kitchen drain. The buzz got louder as they inspected the drain. Often nothing further happened, but on a few occasions eggs were laid around the top of the drain, the eggs scattered about and not in one pile. Two lots of eggs were collected, the first failed; the second lot from 19 May were reared and produced a dozen adults. The larvae are rat-tailed maggots that feed on decaying muddy vegetation.

The last male of the spring generation in the garden was recorded on 17 May, and at this time not only was I getting females regularly buzzing about the back yard, but many females were getting trapped indoors

if the back door was left open, although they lacked any ability to find their way out again!

That was really the end of my observations of *E. pertinax* in 2020. Whatever this species was doing in the rest of the year, I never saw a male hovering after 17 May. (Information on autumn hovering would be welcome). This species was only an occasional visitor afterwards. Checking back on some notes made years ago I found that most of the observations of hovering males were also in the spring, the peak month being May.

As *E. pertinax* disappeared, *E. tenax* took its place as my most regular hoverfly visitor. The first male came on 21 May, earlier than that were 8 separate records of females (25 March to 21 April) which I took to be the spring generation of overwintered females. In this species mated females spend several months in hibernation, laying eggs in the spring, so that males will not normally be seen until mid-May.

E. tenax was the main species studied in my Ph.D. thesis of 1977, but sadly as a student I did not realise the value of being an early riser. On a good sunny day in summer 2020 the first sunshine reached one corner of my garden soon after 7 a.m. and in June and July the first male *E. tenax* turned up almost at once. The early behaviour is quite clear: males do a very wasp-like flight, going from leaf to leaf in the sunshine, presumably searching for females that have emerged overnight and then come out to bask on foliage. I will call this the "Search Flight". However this behaviour ends within a couple of hours. Other strategies, less conspicuous ones, replace the detailed search flight, including a "perch-dart and hover" strategy that is similar to one phase of *E. pertinax*. They rarely do extended hovering and usually the hovering is directed towards another insect, and not out in open space. There is less opportunity to feed in the morning. In the afternoon males don't bother much with sexual strategy and tend to feed alongside females without interactions.

A characteristic behaviour in *E. tenax* courtship is a "following flight" (described in my earlier article) where the male orients to a female by flying slightly behind and below the female, who responds with a slower than usual flight. When I have seen this, there was never any suggestion that a mating ensued. The females seem to be particularly selective, and all the evidence suggests they only need to mate on one occasion. In 2020 I saw this "following flight" on a few occasions from 23 June to 23 August, but never later in the day than 1 p.m. BST. (In earlier years I also recorded this behaviour from September to November). The search flight I observed regularly early in the morning from 21 June for several weeks. In this particular year *E. tenax* continued to be frequent in the garden through September, in October a few noisily buzzing females came indoors in search of hibernation sites, and the last males were active in the garden on a bright day in November.

The pandemic year of 2020 turned out to be a rare occasion of serendipity, when things turned up without planning. The mixed weather of spring 2021 has made it impossible to assemble such detailed observations. Four female *E. tenax* were in the garden on a warm early day on 27 February, but then the species vanished again. In fact, emerging from hibernation early when some cold weather was to follow was probably a bad choice. However hoverflies will have no more ability to see into the future than we do.

Some *E. pertinax* appeared for a few weeks in 2021 but there were few days warm enough to encourage the lengthy periods of hovering by males that I watched a year earlier. Though I have records of at least a little hovering on most days from 3 April to 6 May, mostly the strategy was the perch-dart and hover of less warm periods. The next few weeks had frequent rain and *E. pertinax* disappeared from my garden as well.

I am left with a few real puzzles, so if anybody can help me I would be delighted to receive information. What do *E. pertinax* do in the autumn? Do they need a different location to locate mates? Do they really not hover much at all after the spring months? With *E. tenax* I still puzzle over why mating pairs are seen so infrequently. Is it just that the best time to find them is the very early morning through the summer, and I am just not up and active soon enough? When I had numerous breeding cages for my Ph. D. research, rarely was there a sign of sexual interactions during the daytime.

No two years are the same. I now realise 2020 was a rare chance to study the behaviour of these two hoverflies in real detail. I may never have the opportunity again!

A female *Eristalis pertinax* reared from an egg laid around the edge of a drain cover on 19 May 2020 (Photo: Jon Heal)

A scarce photo of a mating pair of *E. tenax*, taken in 1997, the female is clinging on to an old stem of purple toadflax (Photo: Jon Heal)

Brachyopa bicolor (Fallén, 1817) a startling northern expansion record

Ken Gartside

The Hoverfly *Brachyopa bicolor* is normally recorded in the southern part of the UK, up to the Midlands, so wasn't a species I had in mind when seeking *Brachyopa* out in May 2021 around sycamore bases (as they all use sap runs to breed). This was in Saddleworth, now part of Oldham, Greater Manchester and in the South Pennines, but also within historical West Yorkshire – VC63.

The background to this is that on 29th April 2017 in Greenfield, Saddleworth I found *Brachyopa pilosa* males here, sunbathing and being territorial around sycamores – basking on emergent Himalayan balsam seedlings, but the species could not be confirmed from initial photography. So the following day and on 2nd May 2017 I returned and managed to find some again – and get macro shots of the antennae to look at the pits, which were indeed small and round, so identified as *B. pilosa*. I also took a specimen and Ian Andrews kindly confirmed my macro photography identification from that. This was a new record for the local area and rare for NW England and Yorkshire.

I tried to find these again in spring in the same area on sunny days in both 2018 and 2019, to no avail. This was within 10 minutes walk from home and on my usual patch, so I was able to visit many times, but without success. However, on 28 May 2020 I found some *Brachyopa* - a delight to see with their orange bodies and the fact that they are not spooked too easily and like to pose - though they were not *pilosa*, but *scutellaris*. This is usually more frequent in the UK. Antennal pits are more kidney shaped than the small round ones in *pilosa*. It was pleasing to be able to put both records as text and images in my little book 'Hoverflies of Saddleworth' in June 2020.

So this odyssey to find *Brachyopa* continued in April and May 2021, and once again, despite frequent visits, there were no sightings until on 18 May 2021 I saw one sunbathing on a tree trunk, in a new spot, only around 100 yards from the previous location, across a small feeder channel from Greenfield Brook.
I took one shot quickly, but it flew off, not to be seen again. Camera settings were all wrong from a previous non macro shot I had been taking, so it was a pretty poor blurred image. Clearly a *Brachyopa* however, so I posted it on the UK Hoverflies (HRS) Facebook group to be recorded as such, just at genus level. A comment on that photo by renowned European expert Frank van de Muetter that this blurred image looked very likely to be *B bicolor* was met with some raised eyebrows and no little excitement on my part - but he turned out to be absolutely right.

I returned when the weather improved to sunny and warm on 28 May to find four or five flies settling on grass stalks and another two basking on tree trunks. This time macro photography was easier and images clearly showed that the grass resters were *B pilosa* and the trunk resters were quite different : *Brachyopa bicolor* - the grey scutellum, bare arista and swollen hind femora were clear to see on those. Frank had also told us that *bicolor* was mainly a trunk bather whilst the others like grass stalks to perch on , as borne out by my few observations too. This record was accepted by the UK Hoverflies Recording Scheme on Facebook, by Roger Morris and Chris Sellen. This new northern and Yorkshire record represents a range expansion of around 75 miles from previous midlands sightings I believe.

The trees here are a mixture in acidic moorland valleys, but the ones around which the flies were congregating are large, mature American Red Oaks (*Quercus rubra*). Two of these have Turkeytail bracket fungus, *Trametes versicolor*, some up a rotting old bough and some on a big trunk breakage which has healed but has allowed in fungal breakdown and wood borers such as beetles where there is no bark, and there is a big sap run, with other minor sap runs on boughs too. These will most likely be the larval origin. Other trees close by are Wych Elm, Hawthorn, Lime, Black Poplar, Beech, Oak, Birch and Ash, but no Aspen.

Further to the above records, a visit by myself and Steve Suttill was also successful, with Steve first spotting a lone *B bicolor* on the same Red Oak trunk on 30 May – also accepted on UK Hoverflies.

As a member of Sorby Natural History Society, I also contacted Derek Whitely about my Saddleworth finds

so that they could be accepted into the society's invertebrate database .It seems that this new Yorkshire and northern record provoked some delving around sap runs by Derek at Haddon in Derbyshire - and amazingly he found a *Brachyopa bicolor* there too on 9th June. Like buses then.....or *Callicera rufa*.....

Once again, this all seems to underline what can be found with consistent diligent watching of suitable habitat. Global warming is also probably part of the equation in this northern shift, as with other species of insects generally.

It also shows that if you can take decent macro photographs many species can be identified if you know which salient features are crucial. The thing is though, that entomologists need to take specimens if we are to build up such knowledge and expertise to cascade to others what to look for, to enable us photographers with such information. So, like it or not, it is still essential to take specimens in many cases of the less common species to be absolutely scientifically accurate with ID. If an expert, Frank van de Muetter had not spotted the first blurry shot of mine and had the ability to recognise it, this record may never have happened – although I like to think with due diligence on my local patch it might have.....

Brachyopa pilosa male (photo: Ken Gartside)

Brachyopa pilosa showing round antennal pits (photo: Ken Gartside)

Brachyopa bicolor male (photo: Ken Gartside)

Steve Suttill looking for *Brachyopa* on red oak (photo: Ken Gartside)

How does our garden grow?

Caroline Phillips

I have enjoyed gardening for more than three decades. Whilst working full time it was a way of relaxing at the weekends and in the evenings during late spring/summer. When I retired, I had time to develop it and maintain it better, including getting rid of pesky aphids spoiling the roses and other flowers. Little did I know I was also getting rid of the beneficial insects that live and visit the garden! How did I get so old and know so little about the diverse range of species that together help control what I considered as 'pests'?

Wanting to create an inventory of all creatures that could be found in our garden I made an effort to take more photos, join more specialist groups on social media and enhance my limited knowledge by buying useful field guides. I did know that ladybirds ate aphids but had no idea that hoverfly larvae will also consume vast quantities, and the more larvae the more adults and the cycle continues, no more spraying insecticides (3 years without using sprays), no more squashing aphids as I will also be squashing anything that is feasting on them. By mid-summer the plants are almost cleared, but more will arrive but so will more hoverflies.

I have also changed what plants I grow to include more open, simple structured flowers, single dahlias and roses, leucanthemums & lots of Yarrow (*Achillea*) and umbellifers like *Anthriscus*, *Pimpinella major rosea*. A helpful tip from a member of the HRS was to plant a carrot and let it grow and flower; cheap and very well-visited by hoverflies and other pollinators.

Recent garden observations of hoverflies; history repeating itself?

David Iliff

In **Hoverfly Newsletter No. 65** (Spring 2019) I wrote a piece describing how two hoverfly species, *Myathropa florea* and *Syritta pipiens*, had seemingly been unaffected by the 2018 heatwave and had remained active during that period, especially on *Euonymus* flowers, in my garden when scarcely any other hoverflies were to be seen. That *Euonymus* shrub had been a productive source of nectar for hoverflies and other Diptera, including the soldierfly *Stratiomys potamida*, which I had found there in three separate years despite my garden not really being typical habitat for the species. This year the *Euonymus* came into flower on 22 July during a prolonged dry spell, and almost the first insect I noticed was a *Stratiomys*, which to my astonishment turned out to be *S. singularior*. The hoverflies soon appeared and as in 2018 both *M. florea* and *S. pipiens* were present in numbers with only occasional visits by other hoverfly species. Before that date I had seen scarcely any *S. pipiens* in 2021.

Some 2021 hoverfly photographs from Gloucestershire

Eupeodes luniger in Woodmancote July 2021
(photo: David Iliff)

Brachypalpoides lentus, Pope's Hill, June 2021
(photo: Martin Matthews)

Cheilosia illustrata, Painswick Beacon, July 2021
(photo: Martin Matthews)

Newsletter No. 26
Autumn 2021

Editorial

This year's newsletter has some welcome snippets on the empid and hybotid front, but lacks my usual round-up of interesting dolichopodids at the annual summer field meeting that was postponed to this year. I am probably not alone in having had trouble finding the usual abundance of dolichopodids this year, even in the wet west, which is perhaps due to the exceptionally dry April hammering wetland species at a critical point in their larval development. We are unlikely to ever have sufficient data in the E&D scheme to be able to analyse the effects of climatic extremes but low-key anecdotal data is probably sufficient to build up a picture of how weather affects this group. So, more records please!

Microphor woes

Martin Drake

This genus of tiny dark flies is the sister group of all other dolichopodids, and looks far more like a hybotid than a dolichopodid. Sweeping low tree foliage seems to be a productive way of finding them. In earlier days when *Microphor* was an 'empid', Collin (1961) included three species in his *British Flies - Empididae* and all seemed hunky-dory. Plant and Cole (2005) added *strobli*, which is fairly distinctive, and hinted at another species lurking under *crassipes*. In my own collection, I recently unearthed two distinct forms of *crassipes* that are clearly different species. In the meantime, Miroslav Barták had found several more western Palaearctic species, and recognised my two forms of *crassipes* in the collection of the Czech University of Life Sciences in Prague. He considers that they are probably Meigen's *crassipes* and Collin's *intermedius* which Collin uncharacteristically described rather poorly but I need to confirm this by checking the type specimen in Oxford University Museum. Now Patrick Grootaert and Jürgen Kappert have found at least two types of *holosericeus*, and molecular data suggests even more forms.

So *Microphor* is a taxonomic nightmare. Do keep your specimens although it may be difficult to name them on external features alone, and you do need to make a good genitalia mount. Chvála's (1983) figures are not as detailed or accurate as we now find necessary and, even if you reach a name using his key, it may refer to more than one species.

Corrections to keys to British *Platypalpus*

Stephen Hewitt

I am grateful to Rob Zloch for pointing out a couple of errors in the keys to British *Platypalpus* that are in circulation. The corrections are given in **bold** below.

The first correction concerns the key produced by Adrian Plant and published in Issue 17 (2012) of this newsletter. The first part of Key I, couplet 13 should read:

Thoracic pleura subshining, katepisternum and **meron** polished black; small (2 mm)..... *pygmaeus* (Mg.).

This mistake was repeated in the updated version of the key that I produced for attendees at the Dipterist Forum workshop on Empids and Hybotids in 2019, except that here it appears in couplet 14 in Key I.

The second correction only concerns the updated version of Adrian's key that I produced in 2019, where for some inexplicable reason I managed to corrupt the couplet concerning *P. infectus*. Key E, couplet 13 should read:

Vt setae closer together (hardly 1.5X width of frons by anterior ocellus); F_2 **much** stouter than F_1; ….. legs otherwise yellow with conspicuous black 'knees'. ..... *infectus* (Collin)

Swarming over umbels by male *Hilara longivittata*

Nigel Jones

Most Dipterists are used to finding *Hilara* species by looking for swarms over running and standing water or beneath and to the side of markers such as trees. Just a few species have been noted swarming in dry biotopes (Chvála, 2005), one of which is *H. longivittata*. Chvála mentions that Adrian Plant "observed both sexes visiting umbels and described large swarms of several hundreds of individuals formed at 1- 2 cm in the lee of higher cover". On 23 June 2021, at Quina Brook, Shropshire (SJ5232) I noted three small swarms of around twenty *H. longivittata* tightly spaced over umbels of hogweed *Heracleum sphondylium*. The individuals in the swarm circled over the umbels, mostly in a clockwise direction, but the odd individual circled anti-clockwise. At the same time the flies moved a short distance up and down. Swarming was quite close to the flower umbel at about 2-3cm. For anyone wishing to view this swarming activity, I have uploaded a short video to my Flickr pages at:

https://www.flickr.com/photos/insectman/51266663138/in/photostream/ , but rather than typing all that out, go to the Flickr website and search for photos (videos are included in search returns) using the term " hilara longivittata swarm".

Courtship in *Poecilobothrus principalis*

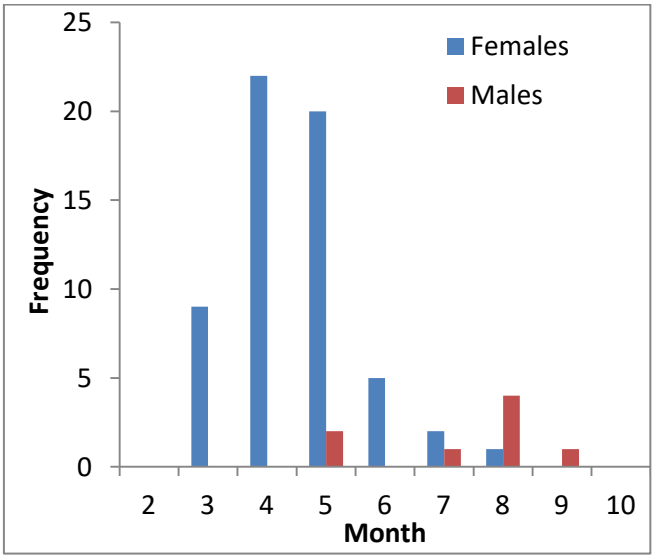
Martin Drake

I'm sure this will have been published already, but here is my observation on the behaviour of one of the less common *Poecilobothrus*. On the short grassy sward of some upper saltmarsh at Chichester Harbour, West Sussex, there were frequent small shallow pools with sparse margins of 'rush' (probably sea club-rush – I didn't check). On one pools about a metre across, which was about half wet mud and half open shallow water, *Poecilobothrus* were doing their usual courtship. Closer inspection showed that mixed with the common *nobilitatus* was *principalis*, in similar proportions and both species actively courting. The dance of *principalis* was perhaps slightly less refined than that of *nobilitatus* but it had the same elements of the male wing-waving, hopping over the female and circling. Both species were also probably feeding on the abundant larvae of mosquitoes and probable limoniids. (18 July 2019 at SU765041).

Syntormon macula phenology

Martin Drake

I received a surprise parcel from Mike Paskin of two males of *Syntormon macula* and several records, having written recently that I knew of only seven male specimens (Drake 2021, see Recent Literature). Mike's records were from the Welsh border at Hereford / Radnorshire, and north Somerset. The few extra dates have allowed a basic analysis of flight period for records where a sex has been allocated. The data support J.E. Collin's suggestion to d'Assis Fonseca (1949) that males may occur later in the year (Fig. 1). So not only does this species have a bizarre over-representation of females, it also has a curious difference flight period between the sexes, females occurring mainly in spring and males mainly in midsummer. This is the opposite flight pattern to that found in most flies, in which males emerge before females, and the two sexes are also way out of temporal alignment.



Oleg Negrobov

Roy Crossley

In January 2021 Dr Igor Grichanov (St Petersburg) notified dolichopodid workers of the death of Dr Oleg P. Negrobov at the age of 79, accompanied with a brief account of his life and work. He had spent his entire career at Voronezh University where he had been a student and where he held the Chair of Zoology and Parasitology, but to most of the dipterological community he will be remembered as a prolific writer of papers on dolichopodid taxonomy and ecology. It is in this connection that his name will be familiar to readers of 'D.D.'

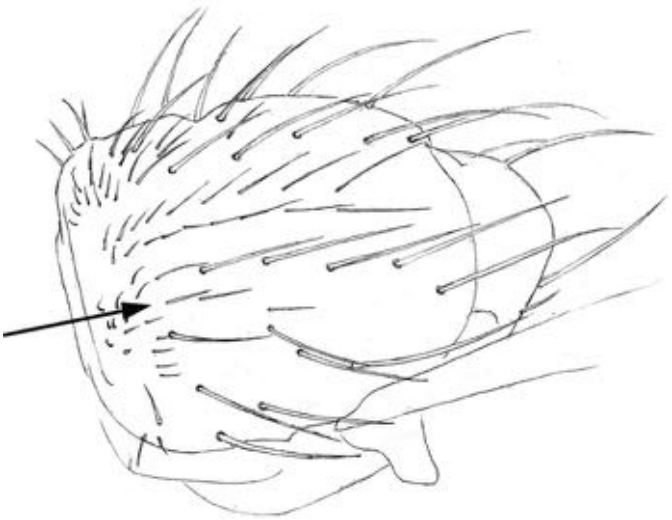
I had the pleasure of meeting Oleg at the 1990 Congress of Dipterology at Bratislava and I have pleasant memories of his cheerful friendliness. I still treasure the traditionally decorated spoon he gave me as a token of his friendship, and from time to time since then we corresponded on matters to do with dolichopodid taxonomy. He was invariably helpful and we managed somehow to communicate satisfactorily in spite of his difficulties with English and my non-existent Russian.

He will be much missed.

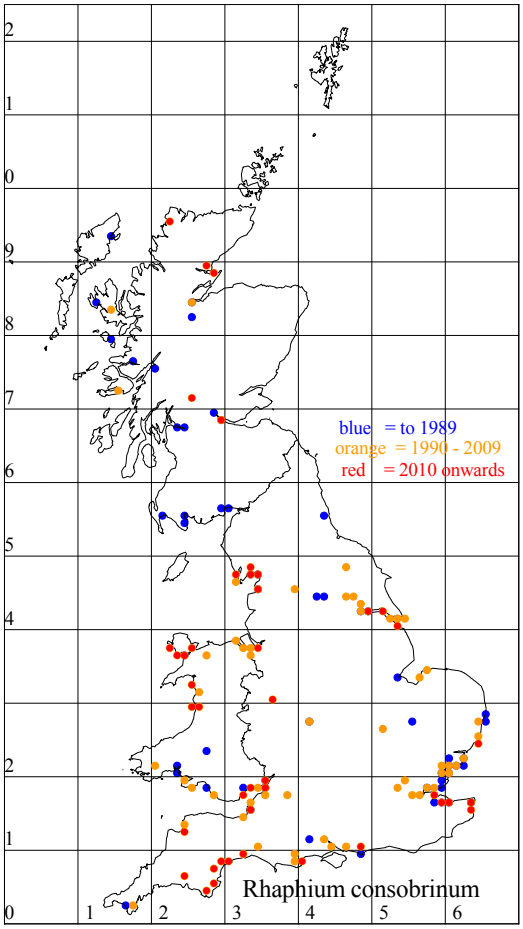
Confusion in *Rhaphium consobrinum* and *laticorne*

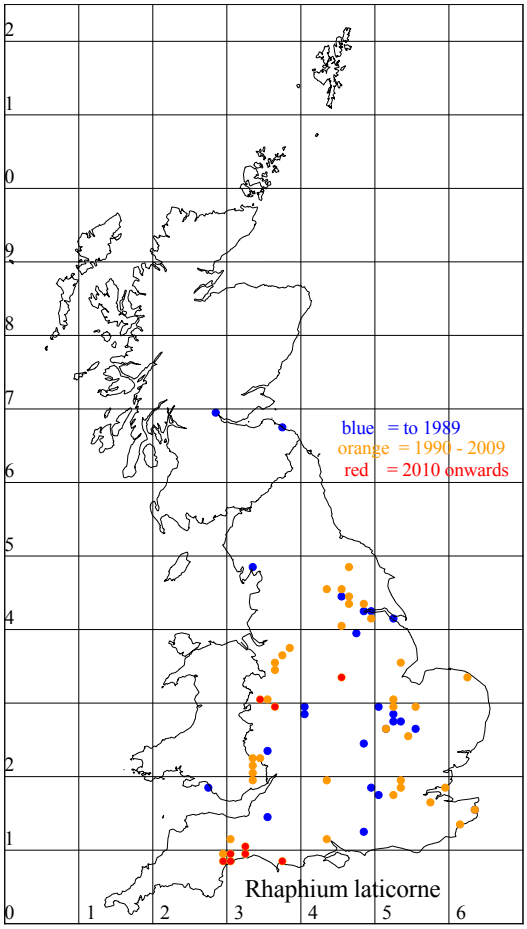
Martin Drake

While I was preparing a new key to female *Rhaphium*, I found plenty of errors in my collection. Some of these may have originated from Jon Cole's suggestion in E&D Study Group Newsheet **3** (1987) that the alternative key provided by d'Assis Fonseca (1978) worked better. I now think that you are more likely to go wrong using the alternative key, particularly with the *consobrinum* / *laticorne* pair. The figure



shows where these little extra hairs are, used first by Parent (1938) and repeated by d'Assis Fonseca, and they are not too difficult to see. Here are maps of these two species based on the E&D dataset. I think that nearly all those inland *consobrinum* records will turn out to be *laticorne*, since *consobrinum* seems to be a specialist of saltmarsh where it can be frequent, whereas *laticorne* is a freshwater species. Some inland sites for *consobrinum* may perhaps have saline influence, in which case this confirms the habitat requirement. If you have genuine inland *consobrinum* records, please let me know as I will need to alter my draft Handbook text.





Thrypticus work in progress

Martin Drake

Together with David Gibbs and Andy Godfrey, I am working on nearly doubling the number of species of *Thrypticus* mentioned by d'Assis Fonseca, from 7 to 13 species. No-one will thank us for this as it makes a tricky group even worse. I am happy to look at anyone's *Thrypticus* which could well contain some of the 'new' species, or maybe a species that we've not encountered ourselves. Females will continue to be a problem.

Some interesting dolichopodid records in 2020

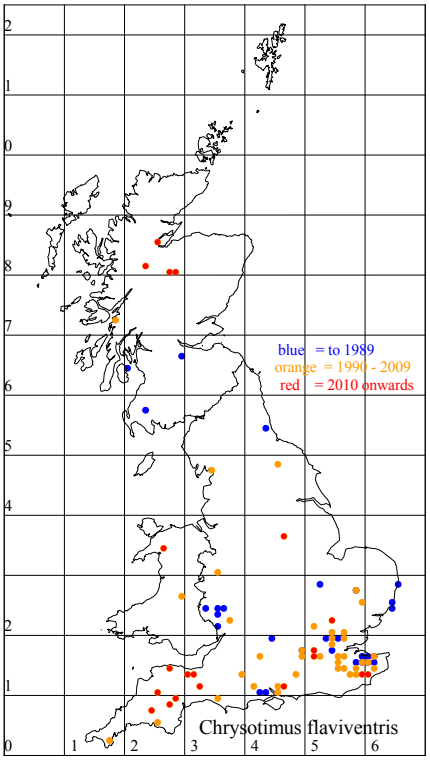
Martin Drake

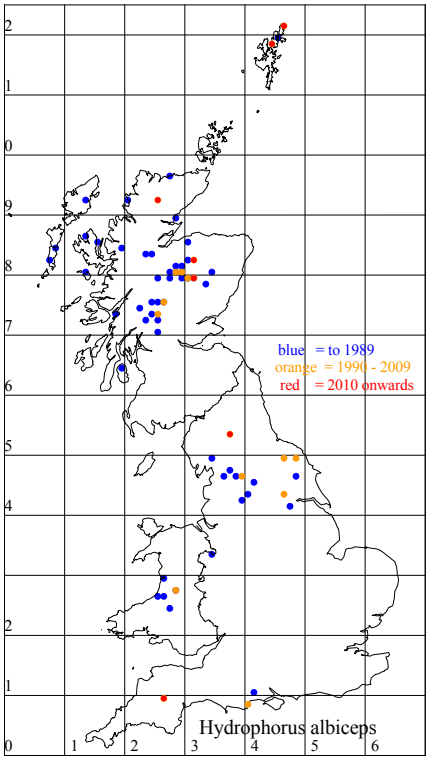
Chrysotimus flaviventris – I previously pointed out that this species occurs sparingly in Scotland where the 'common' *C. molliculus* is absent (E&D Newsletter **20**, 2015). This genus is most often found by sweeping low tree foliage. Murdo Macdonald made two records by beating the foliage of yew (*Taxus*) and lime (*Tilia*), which is not a method dipterists tend to use. (Dundreggan NH331146, 23.vii.2020; Brahan Estate NH5154, 9.vii.2020).

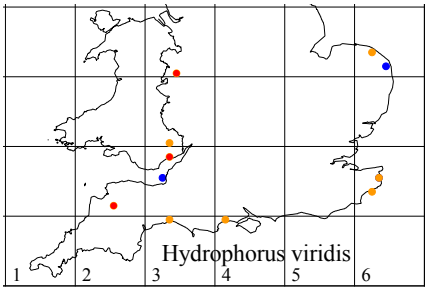
Hydrophorus albiceps – Karl Graham added two northern records in 2020 for this predominantly northern species, at the tip of Shetland close to an earlier 1987 record by Brian Laurence. Karl's records are almost as far north as you can get. I produced a map of this species in E&D Newlsetter **19** (2014) in an note that highlighted the few southern records, so this species spans 1100km in Britain. I have records for only 14 dolichopodids from Shetland.

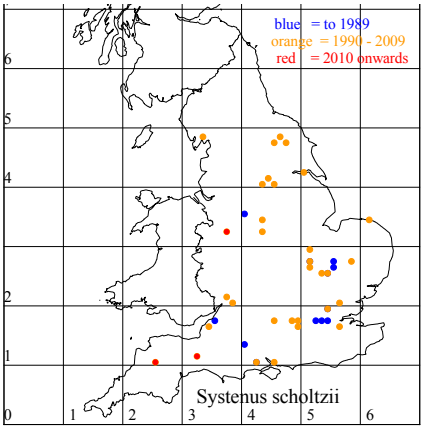
Hydrophorus viridis – Most records of this uncommon species are from coastal habitats including soft cliffs, dunes and saline scrapes, but a few verified records come from inland localities. The latest inland records were made by Rob Wolton from exposed river sediments (ERS) of the R. Torridge (SS548134, 1.vi.2020) and by Nigel Jones a few years ago from a gravel pit (Gonsal Quarry, SJ480, 6 & 21.vi.2016). The only other inland record is from Welsh ERS. The common factor in many of the records appears to be well-drained course material.

Systenus scholtzii – Trapping and rearing are often cited as the methods to find this genus. Rob Wolton twice caught single females in bottle trap placed over small water-filled ash rot hole (Scadsbury Copse and Moor, SS519014, 29.v. & 1.vi.2020), although I had previously found it (and *leucurus*) by sweeping up-and-down trunks while searching for *Medetera* and *Neurigona*.







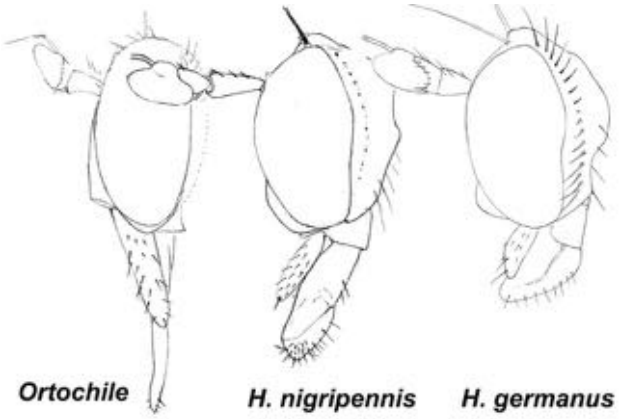


Hercostomus nigripennis on umbels

Martin Drake & John Walters

Not to be outdone by Nigel with his *Hilara* at hogweed, John posted a short film of *H. nigripennis* on wild carrot (*Daucus carota*). The males are courting females and, of greater interest, the flies are feeding on the flowers. Both sexes are poking their mouthparts well down into the florets. Flower-feeding is rare in this family as the males, at least, are not morphologically equipped for this. *H. nigripennis* has a most unusual long proboscis in both sexes. The other regular flower-feeding dolichopodids are *H. germanus*, whose females have a slightly longer-than-normal proboscis, and the probably extinct *Ortochile nigrocaerulea* whose proboscis is as long as the head's depth. Take a look before the film escapes to the ether:

www.youtube.com/watch?v=2xS25i_NkSE



Recent literature (dolichopodids)

Alexander, K.N.A. 2020. Recent records of *Australachalcus melanotrichus* Mik (Diptera, Dolichopodidae) and observations on its habitat and range in Britain and Ireland. *Dipterists Digest (Second Series)* **27**, 181-184.

Alexander, K.N.A. 2020. Confirmation of a Herefordshire population of *Systenus tenur* Loew (Diptera, Dolichopodidae). *Dipterists Digest (Second Series)* **27**, 142.

Drake, C.M. 2020. Two species of *Chrysotus* (Diptera, Dolichopodidae) new to the British list. *Dipterists Digest (Second Series)* **27**, 127-137.

Drake, C.M. 2020. The identity of *Syntormon pseudospicatum* Strobl (Diptera, Dolichopodidae). *Dipterists Digest (Second Series)* **27**, 61-82.

Drake, C.M. 2021. Comments on the taxonomic status of some British species of *Syntormon* Loew, 1857 (Diptera, Dolichopodidae). *Dipterists Digest (Second Series)* **28**, 17-44.

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Cranefly News

Dipterists Forum Cranefly Recording Scheme

For Superfamily Tipuloidea & Families Ptychopteridae & Trichoceridae

Newsletter No 37 **Autumn 2021**

Editor: John Kramer

Male genitalia of Dicranomyia radegasti Photo. JK

Good News !! British Craneflies by Alan Stubbs, was published on 26th July and copies are now available from the British Entomological and Natural History Society or from Pemberley Books (www.pemberleybooks.com). A discount is available for Dipterist Forum members. Check the BENHS website (www.benhs.org.uk) for details.

This well-illustrated book will be a tremendous help to all naturalists who wish to study craneflies and of great interest to those who already are.

In 1901 George Verrall published British Flies. Vol. VIII. Platypezidae, Pipunculidae and Syrphidae of Great Britain and thus started the ball rolling. In 1909 Vol V of the 'British Flies' series, 'Stratiomyidae and succeeding families' was published, also by Verrall. In the 1880's Verrall turned his attention to the Tipulidae and in 1886-8 published a 'List of British Tipulidae, etc. ('Daddy-longlegs') with notes' in the Entomologist's Monthly Magazine, spread over a few issues. The 'Tipulidae etc.' covered what is called the Tipuloidea today and the 'etc' included Dixidae, Ptychopteridae and Trichoceridae. The notes included keys to genera and species and so the first steps towards a book on British Craneflies was begun. I guess that this was to be 'British Flies. Vol. I' on Verrall's master plan.

Alan Stubbs has continued Verrall's work, publishing first, British Hoverflies (Alan Stubbs and Steven Falk), then British Soldierflies and their Allies, (Alan Stubbs and Martin Drake) and now the first book on British Craneflies. The book has had an unusually long gestation period and the groundwork was laid down in 2005. The Cranefly Recording Scheme began as an idea 50 years ago, and was launched in April 1972 when the first Newsletter was sent out by Alan. British Craneflies will serve as a fitting celebration of that fiftieth anniversary ! Congratulations to Alan and thanks to Roger Hawkins at BENHS for his hard work editing and desk-top publishing.

Dicranomyia radegasti Starý 1993 newly recorded in Britain - John Kramer

This species was taken at Glen Nant NNR, Taynuilt (NR7283), Argyll & Bute, Scotland, by the Norwegian entomologist Kjell Magne Olsen on 30 May 2018, and although it has been recorded regularly in Norway, this record is a first for Britain (Kolscár et al 2021). *Dicranomyia radegasti* belongs to a cluster of species which are difficult to distinguish in the field and close examination is necessary for accurate identification. In his description of *D. chorea* in 1886, Verrall refers to his puzzlement with this group and says 'I hope, that by further examination of the male genitalia in a living state, to come to more definite conclusions'. Work has continued on the taxonomy of these yellow *Dicranomyia*. In 1993 Jaroslav Starý named *D. radegasti,* and the most recent paper sorts out those species in the *D. mitis* aggregate. (Starý and Stubbs 2015).

The identification of *Dicranomyia radegasti*.

Like all *Dicranomyia*, Sc2 is strongly retracted and the hypopygium has a distinct swollen outer dististyle (ventral gonostylus) with a 'beak' (rostrum) and a pair of black bristles (rostral spines).

From its yellow/brown body *Dicranomyia radegastri* is something that we might identify in the net as *D. chorea*, *D. modesta*, or one of the *D. mitis* group such as *D. lutea*, or *D. imbecila*, so what are the differences ?

The wings of *D. radegastri* are clear whereas typical specimens of *D. chorea* have more or less dark wing markings, ie a dark stigma and infuscation of the cross-veins, (Fig. 5) which make them identifiable in the hand. In addition, the inflated inner gonostyle of chorea, visible with a hand-lens (Fig 3) is less elongated and more spherical than specimens in the *mitis* group. If in doubt, where markings are pale, a binocular microscope must be used.

Fig 1. *D.radegasti*. Male hypopygium

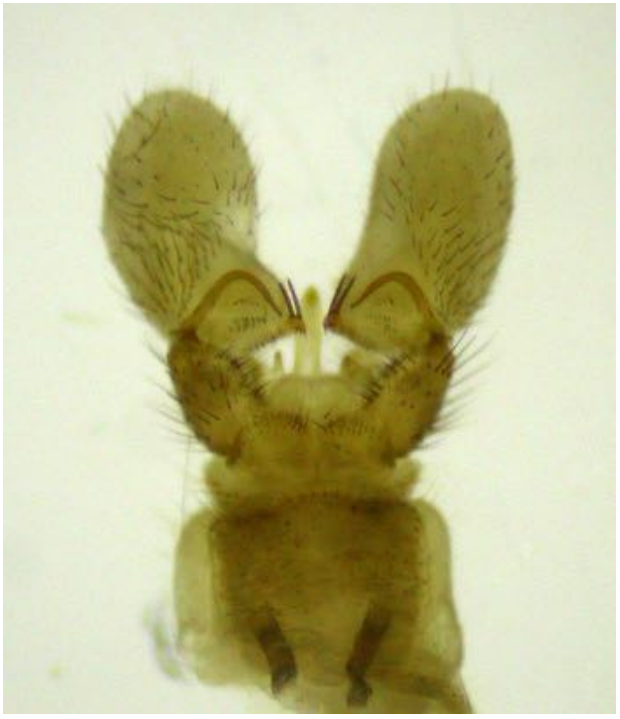

Fig 2. *D. mitis*. Male hypopygium

Fig 3. *D.chorea*. Male hypopygium

Fig 4. *D. radegasti*. Antennal segments.

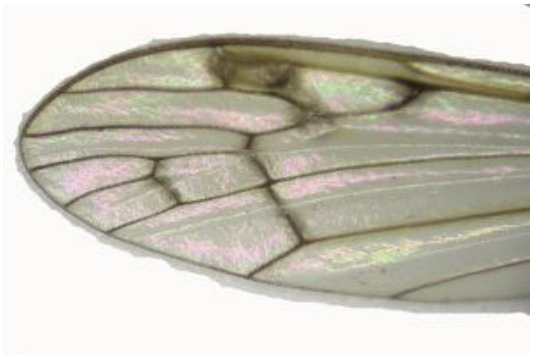

Fig 5. *D. chorea*. Typical wing.

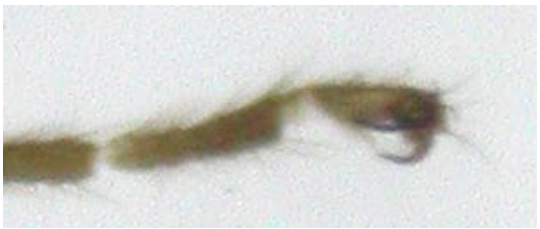

Fig 6. *D. radegasti*. Tarsomeres 4 & 5.

Confusion may occur with some species of yellow-bodied craneflies in this *D. mitis* group. Here again wing markings are helpful. In contrast to the clear wings of *D. radegasti,* three species in this group have a dark stigma spot, which leaves *D. lutea*, and *D. imbecilla* where markings are pale or absent.

Having sorted your yellow-bodied clear-winged *Dicranomyia,* this is where we need to use higher magnification. *D. modesta* has a very distinct dense mat of fine black bristles on the inner surface of the elongated swollen style. Members of the *mitis* group typically have, like *D. radegasti*, a more elongated outer inflated dististyle with the rostrum bearing two spines. In the *mitis* group (Fig. 2) these spines are yellow and longer, and in *radegasti* (Fig. 1) they are black, significantly shorter relative to the inflated dististyle. Fig. 1 shows clearly the alignment of the spines that are similar in length to the rostral spines of *D. chorea (Fig 3)*. In other respects *radegasti* is similar to *imbecilla.* Both have claws with a single tooth and both have tarsomere 4 larger than tarsomere 5. In *D. lutea* the two last male tarsomeres are sub-equal in length and tarsal claws are short, with only one tooth (Fig 6) (Stary 1993)

Key [British Craneflies, p151-159.]

Genus *Dicranomyia.*

Following the key in 'British Craneflies' (Stubbs 2021) we are led to *Dicranomyia* Group 4 (p158). This contains those yellow specimens of *Dicranomyia* with clear wings, a closed discal cell and more compact distal flagellar segments (Fig 4). In contrast to *D. chorea*, the femora of *D. radegasti* have pale apices, and for males, we are led to couplet 5. This takes us into the *D. mitis* aggregate. The characteristc dark short rostral spines identify *D. radegasti.*

Summary of Diagnostic characters

Wings clear, dark rostral spines short and aligned as Fig 1 above. Tarsal segments 4 & 5 of unequal length, as in fig 6.

Ecology

D. radegastri is named after Radegast, a God of a mountain range in Moravia where it was first found flying along a steep brook bordered by beech and spruce forest. There are a number of records from Norway. In Glen Nant NNR (NN0127), Argyll and Bute, a male *Dicranomyia radegasti* was recorded by Kjell Magne Olsen together with *Tasiocera fuscescens*, and *Dicranomyia quadra.*

Conclusions

This species has not been on the radar of British dipterists and we must thank Kjell Magne Olsen for bringing it to our attention. It is probable that specimens will be found in many collections, especially in Scotland, when they are searched. Also when visiting hilly or mountainous regions yellow-bodied *Dicranomyia* should be retained and examined closely.

Thanks to Kjell Magne Olsen for sending the author a specimen of *D. radegasti* from Glen Nant NNR.

References

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Starý, J. (1993) Two new European species of Dicranomyia Stephens, 1829, related to D. (s. str.) chorea (Meigen, 1818) (Diptera, Limoniidae). Bulletin Zoölogisch Museum, Universiteit van Amsterdam, **13**: 175–182.

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Stubbs, A.E. 2021 British Craneflies. Brtish Entomological and Natural History Society.

John Kramer

Down to earth - swarming in *Tasiocera* craneflies - Geoff Hancock

A few years ago I was lucky enough to see an interesting bit of behaviour of *Tasiocera murina* (Meigen). I have no idea if it has been observed before and at the time did nothing about it except make a brief entry in my field notebook. I watched a swarm of several dozen individuals, the species identity of which was made from a small (all-male) sample. I was collecting along the rocky grassland at Bennane Head, near Girvan, South Ayrshire (NX08-06-), 24 May 1986. This event was a substitute for a boat trip to Ailsa Craig cancelled on the day due to sea conditions being unsuitable for landing, a fairly common and frustrating experience.

The nature of the steeply sloping ground brought my eyes almost level with some tussocky clumps of grass. Otherwise, whereas I might have got them in swept samples, it would not have been possible to observe them swarming. They were doing so in the space between over-arching grass stems close to the ground and accomplishing it within a vertical space of about 40cms. The genus *Tasiocera* includes the smallest of all craneflies, with a wing length of about 2.5mm, and I surmised that being so tiny they behaved this way to be sheltered from the on-shore coastal breeze in such an exposed situation. Whether or not this is a common phenomenon under these conditions is not possible to say. Having become aware of this behaviour I have made a point of looking under similar circumstances but never witnessed it again.

Unidentified *Gonomyia* - now resolved - Geoff Hancock

A damaged specimen of *Gonomyia* defied identification from then available resources and it had been suggested that it may represent an unknown species. Following the appearance of two images in *Cranefly Newsletter* No **35** (Spring 2020) an email was received from Kjell Magne Olsen who sent a series of excellent photographs of the genitalia of *Gonomyia dentata* from a variety of angles. We agree with his suggestion that the specimen, collected at Loch Ailort back in July 1992 is in fact that species. We thank him for taking the time to compare the remains of this insect with Norwegian examples.

E.G. Hancock, Hunterian Museum, University of Glasgow.

***Ctenophora (Cnemoncosis) ornata* from South Wiltshire - Pete Boardman & Graham Owens**

GO, a long-standing moth trapper, alerted PB to a couple of specimens of the spectacular Smudge-winged Comb-horn cranefly *Ctenophora ornata* at a moth trap located on a private site near Normansland, Wiltshire, north of the New Forest (approx. SU2317) on the 19/07/21. *C. ornata* is only known from a small number of old growth woodlands with veteran beech trees including the New Forest, Windsor Great Park, and Sherwood Forest, and though these specimens are not far from the New Forest cluster of known records, they are from a new location and new to VC8 South Wiltshire. In recent years moth trap records of this species have been in the majority. The authors would like to acknowledge the landowner for permission to set light traps.

There was no Cranefly News in the Bulletin 90, Autumn 2020 so the items below were somewhat lost in the text of the Bulletin (p6), and are therefore repeated here.

Corrigendum - John Kramer

There are two ID errors in my paper, Cranefllies of the Ravin de Valbois, France.(DD. 2019 26, 83-95). *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.

***Rhipidia uniseriata* in Northants - John Showers**

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. The attached photos show the habitus and wing markings.

The Next copy deadline for Issue 38 is on Dec 31st 2021.

County Recorders

Dipterists Forum

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)

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

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

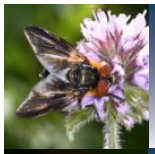
The dipterists indicated have a good local knowledge and work closely with their LERC. Blue background = organised Regional Groups. Yellow text = hoverflies only

ALERC
Association of Local Environmental Records Centres

A joint ALERC & Dipterists Forum project by Darwyn Sumner

Dipterists Forum

Recording Schemes & Study Groups



Tachinids
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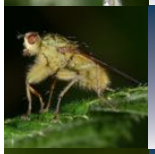
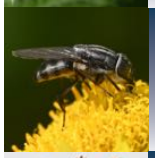
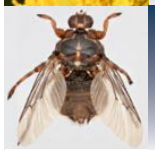
Matthew Smith MatSmith1@compuserve.com



Scathophagids
Scathophagid Recording Scheme
Stuart Ball stuart.ball54@gmail.com



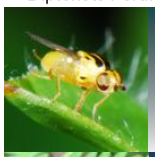
Calliphorids
Calliphoridae Recording Scheme
Olga Sivell aruma@wp.pl



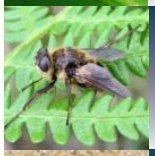
Hippoboscids & Nycteribiids
Ked, Louse & Bat-fly Recording Scheme
H: Denise Wawman denisewawman@gmail.com
N: Erica McAlister e.mcalister@nhm.ac.uk

Collating & Managing

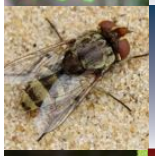
Methods available to the schemes are limited, for example there are presently no suitable image management tools. Current tools are: Recorder 6, MapMate, Excel & Access. Both BRC and Dipterists Forum may help Schemes with this task.



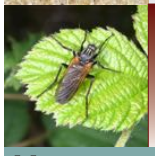
Chloropidae
Chloropidae Study Group
John & Barbara Ismay
schultmay@insectsrus.com



Oestrids
Oestridae Recording Scheme
Andrew Grayson
andrewgrayson1962@live.co.uk



Sarcophagids
Flesh Fly Recording Scheme
Daniel Whitmore daniel.whitmore@smns-bw.de
Nigel Jones nipajones@talktalk.net



Empid & Dolichopodid
Recording Scheme
Martin Drake martindrake2@gmail.com
Steven Hewitt smhewitt@hotmail.co.uk
Nigel Jones nipajones@talktalk.net

Homes and keys

All of the Recording Schemes have a home on the Dipterists Forum website
Some of these are quite substantial and may be where you will find **identification keys**.
Others have additional homes (red home symbols) which they might prefer (check both)

Collecting

iRecord
Spreadsheet
iNaturalist
Social media

Disseminating

Own website
iNaturalist project
Scratchpad
Overseas interest

Look for Newsletters on these sites and in the Dipterists Forum Bulletin (https://tinyurl.com/y3pqcajh)

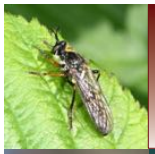
Dipterists Forum www.dipterists.org.uk

Publishing

Open Data publishing to publicly accessible sites is our contribution to conservation & education. Many schemes achieve this through NBN Atlas and GBIF. In 2020 our UK total was 341,353 with an additional four times that figure planned.

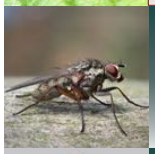
Design
D. Sumner (ADS)

Download as interactive pdf from https://tinyurl.com/y3pqcajh



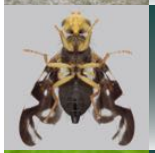
Soldierflies & Allies
Recording Scheme

Martin Harvey kitenetter@googlemail.com



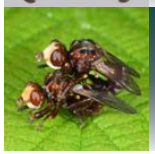
Anthomyiids
Anthomyiidae Study Group

Phil Brighton
helophilus@hotmail.co.uk



Tephritids
Tephritid flies Recording Scheme

Laurence Clemons
laurenceclemons56@gmail.com



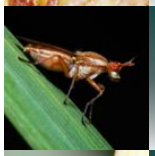
Conopids
Conopid Recording Scheme

with Lonchopteridae, Ulidiidae, Pallopteridae & Platystomatidae

David Clements dave.clements@ntlworld.com

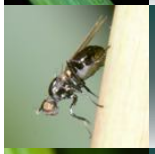
Agromyzidae
Leaf-miner Recording Scheme

Barry Warrington agromyzidaeRS@gmail.com



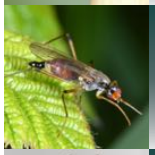
Sciomyzids
Snail-killing flies Recording Scheme

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



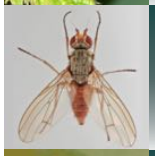
Sepsids
Sepsidae Recording Scheme

Steve Crellin steve_crellin1@hotmail.co.uk



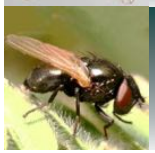
Micropezids & Tanypezids
Stilt & stalk-fly Recording Scheme

Darwyn Sumner darwyn.sumner@ntlworld.com



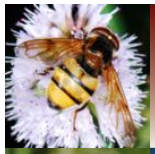
Heleomyzids
Heleomyzid Recording Scheme

Ian Andrews syrphus@hotmail.co.uk



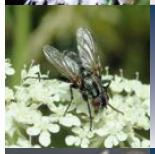
Lance-flies
Lonchaeidae Study Group

Nigel Jones nipajones@talktalk.net



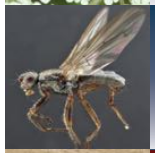
Hoverflies
Hoverfly Recording Scheme

Stuart Ball stuart.ball@dsl.pipex.com
Roger Morris syrphid58@gmail.com
David Iliff davidiliff@talk21.com



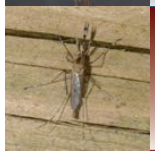
Rhinophorids
Rhinophoridae Recording Scheme

Ryan Mitchell ryanmitchell1994@live.com



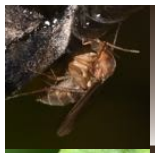
Coelopidae, Heterocheilidae, Helcomyzidae
Kelp-fly Recording Scheme

Donald Smith KelpflyRS@gmail.com



Culicidae
Mosquitoes Recording Scheme

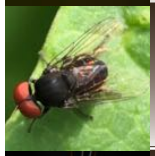
Jolyon Medlock jolyonmedlock@hpa.org.uk



Fungus Gnats
Recording Scheme

Mycetophilidae & allies

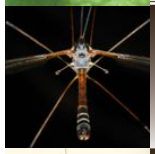
Peter Chandler chandgnats@aol.com



Flat-footed flies
Recording Scheme

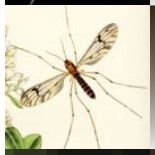
Platypezidae

Peter Chandler chandgnats@aol.com



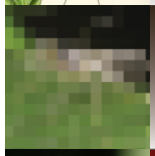
Craneflies
Cranefly Recording Scheme

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



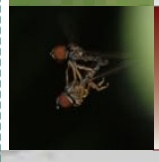
Dixidae & Thaumaleidae
Recording Scheme

Julian Small
julian.small@naturalengland.org.uk



Chironomids
Chironomid Study Group

Patrick Roper patrick@prassociates.co.uk



Pipunculidae
Study Group

David Gibbs DavidGibbs6@sky.com