

Dipterists Forum

Bulletin No. 97

Spring 2024







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Images selected from our Dipterists Forum Flickr group. 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. Front cover must be upright (portrait) and have an aspect ratio of 6:7 (or be croppable to that ratio)





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Soldierflies Newsletter #10	(6pp)
Hoverfly Newsletter #75	(8pp)
Cranefly Newsletter #42 (:	12pp)

Digital versions

Some of the above contain hyperlinks so you'll need to download the digital versions to save you having to type them out. Obtain them in 3 parts:

- 1. The above Bulletin Contents
 - Available as pdf to all members via our website at the time of publication Back issues may also be obtained from our website
- 2. **Newsletters** (no hyperlinks) free pdf regardless of membership status
 - https://www.micropezids.myspecies.info/node/301 or our website
- 3. Recording Schemes Brochure free pdf regardless of membership status
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 - The back pages brochure is an interactive pdf which links all the schemes to their various activities, projects and websites. Download it and click on the icons.
 - iNaturalistUK projects to Diptera Recording Schemes https://tinyurl.com/yrd28des

Copies of this Bulletin are mailed to Dipterists Forum members if they have chosen that subscription option

Editorial

Naturalist's collections

The proportion of new readers of this Bulletin is difficult to gauge, you'll perhaps get a bit of an idea if you read John Showers membership account below. If that's you then welcome to the club. Stalwarts will know this already but if you want to see the range of topics we've covered then you should check out the archive of the last few copies either on our website or at https://micropezids.myspecies.info/node/301 where the Bulletin editors have stored them. The last time we'll be able to upload to the latter as it freezes up in June.

So what is in that range of topics to interest you? Like all popular magazines you might have to hunt back through a few previous issues for something in particular. It would be nice if we were able to assemble an index to help with this like the Dipterists Digest editors have done with theirs but I fear that's a task for some willing volunteer in the future.

One particular range of topics that has arisen in recent discussions is recording methodology. There are several ways of doing it and each Recording Scheme has their preferred methods; the back covers of this Bulletin indicating what those are

Recording for yourself

Most important is your observations and choosing a method that suits you best, just make sure you record all the four "W"s (who,what, where, when.) If you're a new reader then this list of methods might help:

- Notebook, mini tape recorder, mobile phone, tablet, camera
- Spreadsheet (MS Onenote is also an invaluable notepad)
- Personal photo collection (iMatch) making sure to download from cameras and phones and add geospatial coordinates
- Personal specimen collection: go to one of our workshops (see bursaries) or obtain *A Dipterists Handbook*
- Biological recording software: Recorder, Mapmate

Beyond that you're then looking at the most suitable ways to pass that information on to others.

Feedback

My late boss Derek Lott used to delight in announcing the number of emails he'd received in the morning, an indication of the popularity of our department I suppose. He'd then return to his office to answer them all. This Bulletin is similarly popular, by late January I'm still working my way through some 170 incoming messages. A whole range of topics, amongst them a number of encouraging responses to the last Bulletin:

congratulations on another excellent Bulletin ... 50 editions are a commendable achievement and it would be a lot thinner without your contributions.

Congratulations on another bumper festival of flies Bulletin

Indeed it was a bumper edition, which doesn't occur very often. Our thanks to all the contributors, we're always on the lookout for more articles; topics we'd like to see include anything iRecordy, Recorder & MapMate, techniques, expeditions and good reads. Sadly we've not the resources to actually commission material but fortunately we know many who are happy to devote their valuable time to help keep us informed. Notably the Recording Schemes with their newsletters and other stories; and if you've a tale to tell ...

One or two blurred copies did escape the checks, many thanks to Jane, Mark and Tony for chasing this issue. If yours was one too then don't forget that Anthony Bainbridge holds all our spare copies and will be happy to replace it.

The Ides of March

Emerging from hibernation after the long winter's sleep, naturalists and others begin to collect their wits and start their activities again. The first of the year's four rambles by the United Field Naturalists was a favourite, usually a cold start but plenty of encouraging signs of spring to build up the enthusiasm for the forthcoming season. So too with many other organisations in the country, traditionally gathering on this second weekend in March each year.

Along the Open Data trail

BRC's invitation to an "Olympic" Recording Schemes meeting that weekend gave rise to a marathon task for yours truly in January as there are many tales to tell. The meeting was just for the Recording Schemes so you may not have heard of it.

Though Dipterists Forum is a small pond in our sector we've the highest diversity of Recording Schemes so the variety of tales is high and the assortment of hats worn by our organisers and contributors quite extensive.

BRC asked Recording Schemes for contributions so I compiled an Open Data poster, dusting off an old NBN hat to do so. That hat was described by NBN's Jim Munford back in 2006 (see Bulletin #72) as worn by "movers and shakers" and was led by RSPB's Mark Avery (who still moves and shakes in British Wildlife.) A more recent GBIF hat takes in a number of broader international issues too, my scheme having a European scope (as in DF objective g.)

Open Data is clearly a topic of great interest to all involved, NBN's Mandy Henshall asks for a blog on the issues raised in the poster and NFBR's Chair Sarah Whild opined "*I agree with your stance re open data*". GBIF of course is particularly keen to see it used. All of these organisations place particular value on the efforts of all us recording naturalists.

After my submitting the presentation BRC responded with details of their event. Data Flow from NE's Mike Prince, BSBI Atlas (Oli Prescott), statistical modelling from Gary Powney & Rob Boyd, visualising records and engaging recorders from Simon Rolph & Rich Burkmar, an iRecord helpdesk, a Butterfly Conservation presentation, something on Red Lists and finally AI image recognition.

No doubt BRC will be writing up a full account of the meeting like they did for the last one but in the meantime if you're a Recording Scheme organiser able to attend then Bulletin editors would appreciate a brief paragraph of your impressions. I'll be happy to receive responses across the wider fauna & flora groups arising from any issues raised that are relevant to us and perhaps tell you about the Newark Wood Show that weekend.

Darwyn Sumner

If you're invested in security and certainty, you are on the wrong planet. Pema Chodron

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.

Web matters

Recording Scheme brochure

The interactive version of this, the back pages of this Bulletin, can be obtained at https://micropezids.myspecies.info/node/301 click on any of the icons in the pdf and you'll be taken to each of the Recording Scheme's initatives. Thanks to the readers who spotted errors, now corrected. On the same page you can obtain pdfs of previous Bulletins covering all my 50 as editor as well as those by Martin Drake and Alan Stubbs.



That website is due to be frozen in June due to the withdrawal of an international service by the Natural History Museum. Hopefully you'll be able to access the materials that are there now. I won't be able to add anything more

though, so unless someone comes up with £3k+ to replace the site along the lines that Barry Warrington has done with his then that's the end of an era. No more space for the hundreds of distribution maps, images and articles and an end to the production of a wide range of Bulletin-related guides and archives uploaded there. Fingers crossed existing ones will still be accessible. There's a need too to find the same kind of time that Barry Warrington put in to restructuring his site and transferring his thousands of hours' work. Si officium operae pretium est facere bis operae pretium est.

Science publishing in crisis

Seems that others share concerns over issues surrounding Science publishing that we've raised in the Bulletin recently. The Guardian (3 Feb) raised the topic, being heavily critical of the inadequacies of the peer review system. The tens of thousands of papers having to be withdrawn by academic journals are reckoned to be just the tip of the iceberg of scientific fraud. Read about it at http://tinyurl.com/mtyn9kh5 and in Nature at http://tinyurl.com/3967xujh It seems to boil down to a battle between AIs which both create the problem and try to fix it. Our best defense before it swamps publishing in our sector too seems to be Open Data, a summary of our take on that is in our poster below. You'll know it's too late for us once you see a paper reporting a sighting of the Loch Ness Monster.

Europe

There are reports of Fauna Europaea being unavailable since the start of the year. Normally a useful site to check on what we've got in Europe; many eminent taxonomists put a lot of effort into the original site.

Its country-presence claims however were not supported by any references leading to reviewers of papers asking authors not to claim country-presence of a taxon based on FE alone but rather to cite Open Data or specific papers. One fine example of the hard task faced by reviewers who voluntarily do that job for us all.

Hopefully it will re-emerge later in the year, allowing reviewers to at least tick that off their to-do list.

Darwyn Sumner

GBIF Biodiversity Open Data Ambassador

Networking Naturalists

There are several organisations of general interest to us naturalists that are worth paying attention to. They all do great work on our behalf, the majority of them less specific than just diptera but then who amongst us isn't interested in other fauna & flora as well?

National Biodiversity Network

Dipterist Forum are members of this of course. Amongst a host of other things the NBNt maintain the UK's NBN Atlas and help us upload Open Data there. Sophia Ratcliffe was our contact for that task but after many years of fantastic help she's now moved on, thanks Sophie. The new NBN Atlas Biodiversity Data Officer is Will Millard. He's been in contact with Phil Brighton and I've written to him on behalf of Dipterists Forum regarding our partner page and all the recording scheme, projects and expedition datasets we maintain there (https://registry.nbnatlas.org/public/show/dp172). Other members of their team we keep in touch with are their Communications and Engagement Manager, Mandy Henshall and Giselle Sterry who also looks after their iNaturalist stuff.

Look for their latest news stories at http://tinyurl.com/3anzbjeh and sign up for their newsletter.

National Forum for Biological Recording

A widely respected organisation who have been keeping their eye on the biological recording ball for many years. BRC boss Paul Harding was secretary when I joined 20 years ago. An independent organisation: "We seek to promote and influence the development of biological recording and the use, management and dissemination of biodiversity information" Find them at https://nfbr.org.uk/?q=home where you'll discover details of their annual conference/expedition (Pontypridd, 9/10 May) and pick up their newsletters.

Countryside access



There's a "Rights of way" officer in every local council who is responsible for keeping our footpaths open.

Every now and then we should pay attention to our access to the countryside, blockages can be very frustrating. We've a member who used to carry around a fencing tool to remove barbed wire from public footpaths.

A recent mention on the wireless caused me to check out the Ramblers Association site at https://www.ramblers.org.uk/ such a great site, maybe would could get them to add a "chasing flies" topic to their front page.

They've a few interesting news items, in one the BBC found 32,000 blockages. Whilst you are out and about then, use your mobile phone to snap and report to the local authority, just like you can for dog shit. Full instructions on the Ramblers site.

Having "fun" with Hylemya

by Donald Smith

I thought that a good place to start tackling my horrifying anthomyiid backlog would be the genus *Hylemya*, which has three species (*H. urbica* (van der Wulp, 1896), *H. vagans* (Panzer, [1798], *H. variata* (Fallén, 1823)) in the top 20 most common anthomyiids recorded in the UK. Males of *vagans* and *H. nigrimana* (Meigen, 1826) are relatively large, have aristas that are extragavently, though sparsely plumose, and a small lower calypter. Their legs are not entirely dark, the tibia being yellow for *vagans*, while for *nigrimana* the middle and hind femora are also yellow. Easy enough distinctions for a beginner. Annoyingly though, according to the DF Anthomyiidae Handout (Ackland, Bentley and Brighton, 2018), *vagans* and *nigrimana* can't be separated for females, and so I was left with more than 40 unidentified specimens.

What if I could find some feature apart from leg colour that distinguished the males of the two species – I could then see if the same character was variable among the females. Choosing a male of each species at random, I found several minor differences in thoracic bristling and several other characters. But of a dozen possibilities, only two held up for the other specimens – almost all male *nigrimana* had a tuft of orangey hairs at the anterior side of the posterior thoracic spiracle and most also had paired white marks behind the ocelli, these being absent in male *vagans*. But when I checked the *nigrimana/vagans* females, all but three of them had the orange tuft and none had the white marks.



Hylemya vagans

It isn't unusual for one sex to be more difficult to recognise than the other (*H. urbica* and *H. variata* being another example), but it got me thinking – could it be that *vagans* and *nigrimana* were actually varieties of the same species, the male leg colour just being a polymorphism within a single species? The UK distribution of *nigrimana* is similar but more sparse than that of vagans (NBN: 466 v. 3519 records; DF handout: 62 v. 260; my specimens 10 v. 21, *nigrimana* being 11%, 19% and 32% of the respective total of the two species). Neither species is shown on NBN as recorded on Orkney or Shetland, in Scotland south of the Forth or the far north of England, and records of both species are relatively sparse on the east coast of England, though these are probably recording biases. Both species are found from April to October, but from the NBN data *nigrimana* has perhaps become less common since 2015.

Going back to the original description by Meigen (1826), a translation (by Stuart Siddell) reads:

88. Anth. nigrimana

Ash-grey: thorax with three black stripes: rear body elongated with black central stripe; Legs, rusty yellow, front femur black. Male: the male appears similar to the previous "species" [*H. strigosa*, a synonym for *H. vagans*], and differs only by the rusty yellow legs, where only the front femur and feet are black ... Female: not known to me.

The keys of Séguy (Diptères Anthomyides, 1923) and Bei-Benko (Vol V. of Keys to the Insects of the European Part of the USSR, 1989) only mention the leg character for males, Bei-Benko saying that *nigrimana* is close to strigosa. Hennig (Anthomyiidae, 1976), again uses only the leg character in the key for males but gives a fuller description of *nigrimana* (translation, Stuart Siddell):

Male: Exactly equivalent to the given description for strenua [another synonym for H. vagans], apart from f2 and f3 are yellow, meaning only f1 are dark. Since there are clear and constant differences on the 5th sternite and on the surstyli (compare figures in the tables), nigrimana is surely to be considered as a separate species and not as a variant of strenua, as has been assumed (for example by Ringdahl 1959, 1960) ... Length of the body: 6.5-9 mm ... The geographic spread of this species is, as far as known, less wide than that of strenua. This could be an erroneous assumption however because of the relative scarcity of nigrimana.



Hylemya nigrimana

This reveals that Ringdahl was doubtful that *nigrimana* was a separate species, but on the other hand, if there were differences between the male genitalia, that would clinch the question. However, referring to the Hennig figures, it wasn't clear to my inexperienced eyes what the "clear and and constant differences" might be. Any minor differences I could see were not mirrored in Michael Ackland's figures for the two species, nor in my own specimens. Neither could I see that any of the subtle differences between the two species for the Ackland figures matched my own specimens, although I have to admit that I have not dissected out their fiddly bits (gonites, phallophore, aedeagus etc.).

For females, Séguy offers a distinction between the species based on sternopleurals being 1:2 and there being no prealar (strigosa) or else sternopleurals 2:2 and a prealar present (nigrimana). However, all my *vagans/nigrimana* females have sternopleurals 2:2 and a prealar. Hennig's description of female nigrimana has more suggestions:

Female: With regards to the female, a difference between *strenua* and *nigrimana* is not always possible. The fl are totally red-yellow (all posterior with the exception of the tarsi are also red-yellow), while those from the female of *strenua* are more or less darkened. According to Villeneuve (see Dulac 1960), the wings should be lightly yellow, those of *strenua*, however, should be hyaline. The feature described by Karl (1928) regarding the colouring of the "Stirnstrieme" [frons?] (completely red-yellow in *nigrimana*, only red-yellow at the front, otherwise black by *strenua*), cannot be used

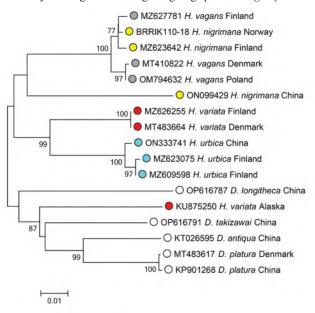
Of my *vagans/nigrimana* females, the front femurs were completely dark for 16, partially darkened for 15 and yellow for 12. If vagans are those with at least some darkening, that would leave 28% of the total being *nigrimana*, similar to the proportion of male *nigrimana* (32%) among my specimens. However, this could just mean that a leg colour polymorphism occurs in both males and females of vagans. I couldn't see any consistent difference in frons colour pattern. All three leg colour groups had a few with yellowish wings, though I find this a

difficult character to use despite my recent cataract surgery.

Knowing something of molecular biology, my next thought was to see what genome sequences might be available for the two species. Searching Genbank and the Barcode of Life Database (BOLD) revealed that mitochondrial sequences are available for both species. A phylogenetic analysis of part of one mitochondrial gene (cytochrome oxidase subunit 15'-region), is shown in the figure for several species in the genera Hylemya and Delia. Sequences from two male nigrimana from Scandinavia group closely with sequences from vagans; pictures of the nigrimana specimens on BOLD confirm the identifications. More than 200 further vagans cytochrome oxidase sequences are available on BOLD, and these group together but fall into two subgroups, one of which corresponds to the vagans Finland / nigrimana group, and the other to the vagans Denmark / Poland group. Of these additional sequences, photographs are available only for two females, one from each subgroup, both with ambiguous leg colour. However, several of the BOLD sequences that grouped with the Scandinavian nigrimana sequences were from males, misidentification is unlikely.

A third *nigrimana* sequence from China is distinct from all other *Hylemya* sequences; no photograph is available for this specimen, and it could be from an entirely different species. Note that *H. variata* is also ambiguous with one of the two sequences grouping with those from the genus *Delia*. These confusing results are a reminder that sequence analysis relies on the accurate identification of specimens as well as lack of cross-contamination of samples or confusion in subsequent annotation and analysis.

Further sequencing should provide a clearer picture – I have suggested that nigrimana is added to the Darwin Tree of Life project. Until then, my challenge to all anthomyiid enthusiasts is: can anyone find characters, apart from leg colour, that separate their male specimens of vagans and nigrimana? Has anyone pairs taken in copula so that females, presumably then of a known species, can be described and compared? Has anyone breeding records of either species? Or should we trust that Meigen had a good eye for a species and that Hennig knew what he was talking about! Perhaps I am fussing over nothing as a way of avoiding tackling even more difficult genera in the family? I am really looking forward to getting to grips with Pegomya ...



Phylogenetic analysis of Hylemya and Delia cytochrome oxidase subunit 1 5'-region nucleotide sequences. A neighbour joining tree was produced using MEGA7. Numbers at nodes indicate bootstrap support where this was > 70%.

Conservation

Conservation Officer report

Coul Links - approval granted but awaiting ratification by the Scottish parliament

On 6th December the Highland Council approved planning permission for the proposed golf course at Coul Links, despite a recommendation to refuse permission given by the Highland Council North Planning Applications Committee. This approval is awaiting ratification by the Scottish parliament. A good critique of the state-of play is given by Andrew Weston via the 38degreessupport@38degrees.org.uk campaign site. He represented Ramblers Scotland in the consultation process. The RSPB is running an online e-action campaign to petition Scottish ministers to refuse to ratify the recommendation. Visit action.rspb.org.uk/coullinks to sign this petition.

For those of our members who are not familiar with the invertebrate value of this exceptional dune system, Coul Links and adjacent Embo sites contain the only population of the endemic anthomyiid *Botanophila fonsecai*. A survey of this site in 2013 aimed specifically at studying this fly is given in Scottish Natural Heritage Commissioned Report No. 618 (cited at end). Below is the latest letter of objection to the golf course that I submitted to the Highland Council on behalf of DF.



Gibbs, D. 2013. Survey and ecology of *Botanophila fonsecai* Ackland (Diptera, Anthomyiidae), a seed-fly endemic to Scotland. SNH Commissioned Report No. 618

Mark Welch

Adopt-a-Species

Skins for strats - Judy Webb

This conservation news item concerns the results of the grapefruit skin bait-trap (Stubbs, 1987) I have been trialling for soldierfly larvae in Cothill Fen NNR and in Lye Valley fen SSSI fen in Oxfordshire. Rare species are found at Cothill, commoner ones in Lye Valley. In my last conservation news piece, I listed some questions I had posed about this method. I now have a few answers as below (in italics) to these questions but there is much more to find out. In this preliminary study, only the larger larvae were identified and only to genus. Which species might be represented?

From observations of adult flies in previous years at Cothill, Odontomyia sp. type larvae would most likely be Orangehorned Green Colonel O. angulata, with the rare possibility of Silver Colonel O. argentata and Ornate Brigadeer O. ornata. Stratiomys sp at this site could be Flecked General S. singularior, Banded General S potamida, Long-horned General S. longicornis or Clubbed General Soldierfly S. chamaeleon. At Lye Valley Stratiomys sp. are almost certainly Banded General S. potamida or Flecked General S. singularior. Larger Oxycera sp. larvae at all sites seen are most likely Fourbarred Major O. rara or Three-lined Soldier O. trilineata.

Skins were checked weekly, alongside other recording duties and conservation management activities on site.



Stratiomys sp larvae from pond edge. Lye Valley 25.10.2023

In this method cleaned out grapefruit skins are placed in wet runnels or shallow pool margins like mini-igloos. As the white inner parenchyma layer gradually rots, it becomes attractive to amphibious larvae of Soldierflies, which accumulate under the skins to feed, presumably on bacteria..

Questions about the technique I had were as follows, with some early answers in italics after the question:

i. What species range of soldierfly larvae are attracted to the skins in any one site?

At Cothill Fen skins were extremely popular with Odontomyia sp and the occasional Stratiomys sp., no Oxycera.

In Lye Valley mainly Stratiomys sp. with rare Oxycera sp were seen. At nearby Chilswell Fen there are manyStratiomys sp. and Oxycera sp. (see results of a separate study in the Soldierflies and Allies newsletter).

ii. How quickly do the grapefruit skins rot enough to become attractive to soldierfly and other larvae? (what other larvae are attracted?).

Depends on temperature, skins usually take a week in summer to

begin to rot enough to be attractive, longer in cooler conditions. Skins need to be replenished with fresh ones at two week intervals. Other larvae attracted include some water beetle larvae, Tabanid larvae, rat tailed maggots (hoverfly larvae) and occasional cranefly larvae suspected to be Ptychoptera sp. Also small pond snails, Gammarus shrimps, a cased caddisfly, slugs and worms.

iii. How long before the skins become too rotten to be attractive and need replacing with fresh skins?

Depends on the temperature, in summer, they might be too rotted by week three, disintegrated, sludgy and black.



Stratiomys sp larvae under rotted skin. Lye Valley 28.05.2023

iv. What is the peak time of year for numbers of larvae under and feeding on skins – (expected to be June and July as in these months larvae reach full size, pupate and emerge as adult flies).

The best time for starting this recording of larvae seems to be beginning of May (over 30 Stratiomys larvae were found in Lye Valley under one skin on 28th May) and yes good numbers in June with a drop during July, as adults emerge. Numbers were lower after this but Odontomyia sp. noted occasionally under skins at Cothill into late October and Stratiomys sp. under skins in Lye Valley until the end of October. Water level increased so much at Cothill after this that the grapefruit skins were inundated and floated away.

v. Is grapefruit trapping a reasonable way of population estimation of any one soldierfly species?

Seems good for the larvae of larger Soldierflies, but specific identification difficult on live larvae (some might have to be killed for keying out) and some cannot be identified beyond genus. Usefulness for larvae of small Soldierflies needs study. For Stratiomys sp. there is no way of knowing if all species are attracted equally to skins or whether for example it is the mostly the commoner ones that are attracted instead of the rare S chamaeleon.

vi. How does temperature of surface water film affect number of larvae under the skins?

On the very hot day of 7th July no larvae of any sort found under skins and the skins were warm to the touch, possibly now too warm for comfort. It would definitely seem temperature is important but it was not recorded. Something for a more detailed study.

vii. How does height of vegetation or amount of bare peat/tufa affect number of larvae under skins? Not really tackled in this preliminary study, something for a more detailed study.

After a year's recording I have some further questions that can be incorporated into a future study plan:

 To what extent are larvae accumulating under the skins just as a cover object to be a safe place to hide away from predation during day time? (see if a grapefruit sized disc of wood put next to the skin accumulates as many larvae as a grapefruit skin?).

- Is making a hole in the top of the skin and putting a bamboo stake through it (to peg it in place) useful or should the skins be left as unpunctured 'igloos'?
- Is it more productive to clean out the skin thoroughly, or leave as many of the white partitions intact as possible to give greater surface area for feeding?
- What happens at night? are the larvae still under the skin or do they leave and wander more widely, returning to the skin during day time?

Reference:

Stubbs, A. E (1987) A stampede of Strat Larvae - to Grapefruit Skins. Larger Brachycera Recording Scheme Newsletter 4 (pages 4–5).



Grapefruit skin with partitions left in and *Stratiomys sp.* larvae 25.10.2023

Judy Webb

(I've tried this in my garden Judy. How do you stop the blackbirds and robins turning them over and eating all the contents? (ed) Judy says pin it down with a pointy stick)

Without any kind of designation some of our most valuable sites are at risk. Even the lowest tier, Local Wildlife Sites, may have only been designated on the basis of brief botanical surveys. If they even fail to meet that grade they may still be of considerable invertebrate interest.

Perhaps we can add the idea of "undesignated sites of invertebrate interest" to our Bulletin shopping list. Technology offers some good tools to share location details, SatNav data points can be exchanged as we've discussed before in this Bulletin but iNaturalist site-based projects can help a good deal more by providing maps. On my list for revisiting this year:

- Norfolk: Burgh-next-Aylsham (http://tinyurl.com/2dhusm55) LWS in process
- Cheshire: Worthington Flash (http://tinyurl.com/3vrpk2w7) for Neria femoralis
- Leicestershire: Cloud Wood (http://tinyurl.com/3259wy7m) county favourite
- Lancashire: several sites (http://tinyurl.com/bdfa5pvf) historical hotspots

Thus doubling the value obtainable from iNaturalist because it can be used to share site information too.

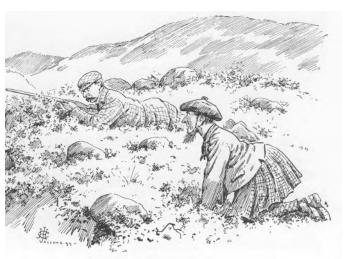
Maybe you know of some good sites in your area that are worth visits by other dipterists, do let us editors have links to ones you've created. It's such an easy thing to make those site maps using iNaturalist + Google Earth to draw shapes. Once you've done that and set up an iNaturalist project as a container for them there's space too for any amount of text descriptions about the site such as parking spots etc.

Like our blocked footpaths we'll lose them if we don't investigate them (BNG doesn't currently cover invertebrate interest though.)

Darwyn Sumner

[The most effective way of ensuring you don't drive past a stonking site on your way through an unfamiliar county is to have Alan Stubbs in the car with you]

Fly-fishing



"Did you remember to send that photograph of our Isle of Eigg trip to the Bulletin editors ${\sf Donald?''}$

"Yes, but if it comes out wrong I'm sure Darwyn will find a suitable replacement picture"

Scotland takes many of the prizes for contributions in this issue. Zoe assembling a great set of speakers for our Edinburgh Annual Meeting and then organising a team from those attending to write about all their presentations.

Donald Smith and his Malloch Society friends tell of an expedition and Andy Godfrey tells us he's got the Buglife contract for the Cairngorms study regarding which Rob Wolton has previously made appeals in this Bulletin.

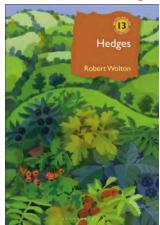
Add to that all the rearing and other techniques and that's several items ticked off our usual shopping list.

A few more regions have joined our two formal regional groups in this issue. Hopefully that suggests there's a good deal of interest in this kind of article. A full set of iNaturalist sites visited by our Devon crew would be really valuable.

Reviews

A popular section but one which has proved somewhat expensive and time-consuming for just one writer. The editors could really use your contributions. Ideas for the next issue:

- 1. Diptera articles seen in journals and on ResearchGate
- 2. Dipterists Digest
- 3. Otherlands by Thomas Halliday (palaeobiology)
- 4. The new "locust years" of ancient-woodland destruction. Ian Rotherham (British Wildlife Vol 35 #4)
- 5. Rob Wolton's book Hedges



The host of tales and tips to be found in this Bulletin come from across our membership. We could always use more no matter how complex or trivial and we'd like to hear from you.

Do contact us if you are engaged in projects of interest to you or simply if you have something to tell. Help create our next "excellent" issue.

Darwyn Sumner, Editor

Recording

The main features in this Bulletin are:

- Support for Recording Schemes
- · Recording Sites
- · Open Data
- iNaturalistUK reports
- News from various Recording Schemes
- Summary of Expeditions & Projects

Recording Scheme support

With such a diverse range of approaches and focusses adopted by the Recording Schemes and Study Groups it's unsurprising that a consensus over general support strategies cannot easily be achieved.

Rest assured though that we're able to deploy what support we can amongst all the other activities that are carried out by the incredible volunteer efforts of Dipterists Forum.

The two main support arms are the story-telling in this Bulletin and any advice that may be offerred by the editors and fellow Recording Scheme organisers and enthusiasts and the general Recording Scheme support offerred by BRC.

Feedback to the Recording Schemes is important. The organisers have put an immense amount of effort into their specialist groups and they rely on responses from those with similar interests to respond to them in various ways.

So if you've an interest in a group, particular skills to offer, tales to tell or problems needed to be solved and a wish to get involved then contact them or Bulletin editors or BRC. Helping the Recording Schemes do their stuff is what Dipterists Forum is best at.

Site Recording



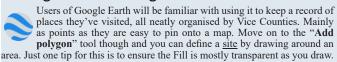
This has always been a tricky area for naturalists. Historically you'd have used maps and grid references and hope someone in the party knew their way around the reserve. Nowadays frequently less than that, just text descriptions on how to get there, some even forgetting how to use OSGRs.

Technology came to our aid with GIS and if you know how you



can find some super maps online or develop biogeographical ones yourself. It has also become a lot simpler to share site information amongst ourselves, simply by combining the easy tools of Google Earth with an iNaturalist Umbrella project like this. Each one hand drawn and each can have text notes of site details.

Sharing sites with Google Earth



In this way you can build a very useful collection for yourself (provided you never forget to File| Save| Save my places.)

Everything you have can also be shared with others if you save them as kml files, we've done this with some of our Field Weeks so that folk can bung them into their SatNavs.

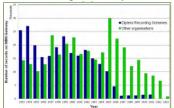
Draw some site shapes now, especially for those regions mentioned below, and send them to us so that we can share them via the site-based iNaturalist projects that have been set up. (Eds.)

Tip: Take a hand-held GPS with you in the field this year and record <u>tracks</u>. We plan a navigation feature for the next Bulletin, contributions welcomed.



Open Data - 10 years after

In 2014, at a meeting arranged especially for us by BRC & NBN at the Natural History Museum we were presented with the following summary of our Open Data efforts:



At around 2009 the cumulative sum looked rather impressive but in 2014 our efforts occasioned the comment "Diptera schemes were not really pulling their weight on the NBN". (Lightfoot in Drake, 2016) Since then the vast majority of those records didn't make it across from Gateway to Atlas so those blue bars shrank by 90%

The recording efforts of most members aim for Open Data so the subject inevitably arises quite frequently as we recount our successes. The valiant efforts of our Recording Schemes (<½ currently) plus those working on our expeditions and projects are shown in the green doughnut below.

Attempts to stimulate debate on the topic of increasing diptera Open Data records and supporting Recording Schemes are directed at a key function (objective b.) of Dipterists Forum.

Following several articles on Open Data in this Bulletin and elsewhere I've been asked to make another presentation.

The scale of the Open Data topic of course would occupy much more even than many conferences, well beyond the scope of a single presentation. Indeed there have been several such conferences since the topic is at the core of major organisations devoted to the task such as NFBR, NBN and BRC who support them.

Historically Dipterists Forum members have been deeply involved in these conferences, a keynote one for us was at the NHM in 2014, organised specifically for us. A particularly memorable one involved a presentation by Derek Whiteley & Steve Garland at a Lancaster NFBR conference (for Recording Schemes) in 2016 whilst both Martin Harvey and Chris Raper have been regular presenters at nearly all of them; even I've done a short one.

Such conferences and debates continue to this day:

1. NFBR 2022 <u>Curating the Past, Creating the Future:</u> <u>Legacies in Biological Recording</u>

Report at http://www.nfbr.org.uk/?q=conference

2. NBN Conference 2023 Making data work for nature on 23 November at the National Museums Scotland in Edinburgh

Full report at https://tinyurl.com/2pvrrre8

3. BRC 2024 <u>National Recording Schemes Meeting 9th March, Wallingford</u>

2020 Report at https://www.brc.ac.uk/brc-scheme-meeting-2020

The BRC organisers have requested submissions to this meeting, hence the poster overleaf summarised as a request for:

A quantitative review of unpublished data conducted by BRC & NBN estimating the location and extent of all non-Open Data datasets from all sources, including museums, LRCs, Recording Schemes etc. (a similar review was conducted by Paula Lightfoot in 2014, see Bulletin #81, p11)

Do try to involve yourself with the above conferences and similar if you want to be better informed. Take some of the requests from the poster below if you do attend and want some specific topics to raise. Join us in pulling some weight.

Darwyn Sumner

NBN Awards for Wildlife Recording 2024

Nominations for the 2024 Awards opened in January and runs until mid-March 2024. Keep an eye out for more information in their Network News

https://bit.ly/Subscribe-NetworkNews

Open Data

A presentation from the "Technical & resources" section of the NBN Data Standards & Tools Steering Group (2006*) for the BRC 2024 National Recording Schemes Meeting *DF Bulletin #72

"There are known knowns, things we know that we know; and there are known unknowns, things that we know we don't know. But there are also unknown unknowns, things we do not know we don't know."[Rumsfeld]



Known knowns

Widely known about in our sector of science of course due to the work by NBN, BRC and newsletters by NFBR, GIGL & TVERC etc.. Not so much outside it; New Scientist never but British Wildlife are crying out for new writers if anyone's game.

Open Data in other sectors is a popular subject, read Ritchie's "Science Fictions" and mentally add a chapter from our sector.

Known unknowns

Online Open Data publishing is an aspiration, it's far from comprehensive though. The gaps are widespread and huge, they need comprehensively reviewing so as to clarify our objectives:

Recording Schemes

Half of our Diptera schemes publish Open Data, amounting to ~15% of total available digitised species occurrences.

- Buglife analysed 45M invertebrate records from Recording Schemes, way more than the combined silos of BRC & NBN (which overlap.)
- What arrangements to support archive and security have been made for all the unFAIR data?

Journals

Not many journals or reports in our sector embrace the Open Data principle by specifying an OD source of occurrences in articles. Only PlosOne includes it in their guidelines for authors, Zootaxa doesn't demand it. Smaller journals may sometimes attempt FAIR principles but they are very rarely encountered in ento journals. We're decades behind the medical sector. Guidance can be found at http://tinyurl.com/5f9bz2m8

· Since we advocate the scientific value of OD and do most of its gathering then shouldn't we be pressuring all journals to mandate its use in published articles?

Local Recording

What's the proportion of records that are retained locally and not submitted to NBN Atlas? There used to be a financial incentive from English Nature for LRCs to upload. Charles Roper detailed data flows and I reported to ALERC on RS some years ago,

- What's the data flow picture now?
- What's the current status of our biological recording software?

Collections

Lifetime works by naturalists end up in museums (or skips in at least one famous case.) Some of this may have achieved Open Data status during the collector's lifetimes but a good proportion has not. Collection datasets can be found on NBN Atlas, Derek Lott's coleoptera is an example, but all collections should be uploaded. This process began in earnest in 2023 with the DISSCO project (see comment by Open Data Institute at https://tinyurl.com/4hb3872t)

- · A summary of uploaded Open Data datasets across the entire museum sector and an indication of progress
- · A review/catalogue of collections awaiting or undergoing processing





The Naturalist's Toolkit

The following processes are pretty much common to all naturalists, the latter half of them in particular by those organising Recording Schemes.

Collection	Traditional + iRecord & iNaturalist. At least 8 different methods
Collation	Desktop applications: QC issues & verification
Management	Desktop applications such as iMatch, Recorder versions, MapMate
Analysis	various such as Biogeography, Phenology, use of R.
	websites with ID keys, guides etc.
Publication	includes both journals & open data publishing + DwC issues

Most of the tools we use find their way into that list somewhere so it could be used as the basis of a RS survey. Online systems have achieved inroads into some of them but by no means all. For example not your image collection or biogeographical, trend and other analyses.

Huge rise in website costs to Recording Schemes (£3,000+ each) following the Natural History Museum's freezing of an enterprise scale (~£3M) service http://tinyurl.com/2u95hstb) marketplace equivalents or alternatives available. Loss of valuable online storage space for guides and <u>no funding</u>.



With thanks to Chris Thompsin (Smithsonian), Giselle Sterry (NBN), Sophie Ratcliffe (NBN), Sarah Whild (NFBR), Phil Brighton, Robert Mesibov & Jorrit Poeler

- We've also lost the FSC Biodiversity Forum which supported their online Identikit key system (which still works)
- Incoherent taxonomic support once you stray out of the UK
- Darwin Core utility allowing conversion from spreadsheets available to professionals or R6 users, not to most RS organisers though. (see Mesibov on GBIF, e.g. at http://tinyurl.com/bdzdaeja)
- No dedicated or suitable Electronic Document Management Systems or Citation Managers

Expeditions

From brief rambles by Natural History Societies, through surveys conducted by LRCs and Recording Scheme groups to international expeditions organised by UK museums.

• Can we locate the museum expedition Open Data datasets? Dipterists Forum have published numerous Open Data datasets from annual expeditions (http://tinyurl.com/5n7wdx4k) since 1998, with BRC help the latest few are down to a fine art.

FAIR Badges L DWCA FARE = accreditation?

Love badges? There's a system for obtaining those, detailed by Jorrit Poelen at http://tinyurl.com/aw4znkeu Test it on your datasets to get them for your website etc. (sample mine.) Perhaps the NBN partner pages could display those for our

Unknown unknowns

Engage the recording interests of naturalists via the Recording Schemes and we'll find out (iRecord, iNaturalist, desktop systems etc.)

Open Data advocacy has been the subject of numerous articles in various forums over the past 25 years. The above summarises several of the most recent issues relating to Recording Schemes and Field Expeditions.

Darwyn Sumner: GBIF Biodiversity Open Data Ambassador [Organiser of three Recording Schemes]

NBN Atlas - Open Data 🛮 🧸

Recording progress



Open Data Diptera records on Dipterists Forum's partner page on the NBN Atlas finally passed the 100k target soon after the last Bulletin and by the end of 2023 stood at 113,882. The additional 14,181 were a mixture of sources, one batch of Sciomyzids, two larger uploads from our two Field Weeks, the MES project plus perhaps

=#91 =#92 =#93 =#94 =#95 =#96 =#97 a small trickle from Recording Schemes (which cannot be tracked.)

Many record pass from BRC's iRecord silo to the NBN Atlas (their major system overhaul now being completed) once they've been verified on iRecord.

The rise in numbers is attributable to two sets of activities, firstly the Recording Scheme organisers who are carrying out verifications on iRecord (though not all of that work passes through) and the team responsible for the Field Weeks; currently Jane and Martin - and of course all the dipterists who attend those expeditions and submit iRecord records; again not quite all of those get included because we've yet to work out how to include those from the growing number of photographers recording exclusively to iNaturalist.

You can monitor the progress of Open Data on our Dipterists Forum partner page at

https://registry.nbnatlas.org/public/show/dp172

Open Data growth potential 2024

Numerous suggestions have been made as to how we might boost those numbers, these suggestions are frequently to be found in recent Bulletins and are summarised here as a kind of shopping list:

- 1. A big boost could be achieved simply by transferring other popular datasets onto our Dipterist Forum partner page (e.g. Craneflies: historic dataset 137,495; current 38,610 or Soldierflies with over 150k), NBN tell me this is perfectly feasible.
- 2. More verifiers to help Recording Scheme organisers
- 3. More Recording Scheme organisers to set up datasets by making arrangements with BRC. A good deal of iRecord verification work doesn't currently get uploaded to Open Data (e.g. Conopidae (5230 awaiting), Muscidae, Bibionidae, Scathophagidae, Tephritidae.)

Less than half of our Recording Schemes deliver Open Data (see Recording Schemes booklet - Bulletin back pages.) DF committee have deferred discussion on this issue. If others share Open Data concerns amongst our Recording Schemes perhaps they would would be good enough to add to that discussion when it begins.

- 4. More practical and technical help for Recording Scheme organisers to upload datasets to NBN Atlas
- 5. More reassurances from NBN (and BRC) regarding Quality Control issues and mechanisms
- 6. More from the missing Field Weeks (see below)
- 7. Datasets from Spring and Autumn Field Meetings
- 8. Data extraction projects (see below)

Next target: 150,000

A **FAIR** growth rate, estimated from the graph on p10 would be in the region of 10,000 to 15,000 per year. Much easier to achieve these days than ten years ago.

General support for Recording Schemes

Scheme-specific websites have proved invaluable in promoting their activities in recent years. The now-discontinued Scratchpads having proved highly successful. Support for replacements have proved either expensive or impossible. Barry Warrington's solution was to seek funding elsewhere than NHM who dropped their support. We need more support.

Darwyn Sumner

iNaturalist**UK**

Schemes in the following accounts with the green birdie symbol have iNaturalistUK projects at the following site:



https://www.inaturalist.org/projects/dipterists-forum

In addition to **Recording Scheme projects**, (23/30) all the **Dipterists Forum Expedition projects** are linked on one of the Journal pages. Membership is gradually increasing - do join us. The site augments the information on the Bulletin back covers.

Growth

Now with 73,000+ records across 25 Recording Schemes. Very similar to the numbers in the separate Hoverflies project.

Joining iNaturalist projects

Signed up members now number 57, these folk can monitor their contribution to our recording schemes because most of the fly pictures they post will now show a link to our Dipterists Forum project.

Recording Scheme organisers are urged to join their own project. A representative image on each individual project would be nice too.



https://www.inaturalist.org/projects/uk-hoverflies-syrphidae

Matthew Vosper is now highly active in this iNaturalist project for our Hoverflies set up by A Emmerson in 2020. Matthew has added a huge number of useful identification guides and recording analyses to the Project Journal. A sort of blog I suppose, so be warned, it'll keep you busy reading for the best part of a morning.

By the end of 2023 there were 75 signed up members and the successful ID rate was a whopping 79% thanks to their efforts.

Expedition iNat Projects



The journal on our Dipterists Forum page has the links to all the expedition projects (and others) that we've set up -

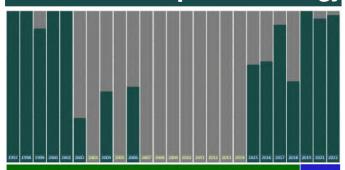
https://www.inaturalist.org/projects/dipterists-forum/journal



Filter tips

An ideal way to start looking at a group not covered by Recording Schemes or in an area of your own (VC perhaps) is to set up an iNaturalist filter yourself. No need to share until you're ready (or at all) but after that we'll be happy to publicise in this Bulletin. Dipterists Forum is here to help and places no beaurocracy barriers or hurdles - all the way up to a full Recording Scheme.

Field Week Expeditions



Field Week Open Data status based on numbers of participants: Dark green bars: data has been uploaded to NBN Atlas (=Open Data) Grey bars: data not yet submitted to NBN Atlas

Epoch 3

Some small backlogs, from just a couple of participants, are currently in the pipeline for the Field Weeks 2003 to 2014. These will have to wait until the autumn due to a heavy workload, by which time it is hoped that NBN have implemented an improved data partner page (separating Recording Schemes, Expeditions & Projects.) In the meantime, if you've any datasets from this Epoch that you cannot locate as Open Data on the NBN Atlas, do send them to me and I'll be happy to process them. BRC have also kindly offered to help with that task.

NBN also provide full instructions on how to upload to the Atlas at https://tinyurl.com/46uhas2x please ensure they are added to our Dipterists Forum partner page (https://registry. nbnatlas.org/public/show/dp172) if you do it yourself.

Epoch 4

The status of these datasets has improved considerably since the last Bulletin. The first batch of the Epoch 4 Field Week datasets, Stirling 2019, Cornwall 2021 and Norfolk 2022 are all on the NBN Atlas now that it has become available for new data.

None are overdue except our spring Oxford 2022 meeting though we've yet to consider spring and autumn meetings. The summer 2023 dataset is still accepting iRecord records and will be processed in the spring of 2024.

Darwyn Sumner

Recording Scheme News Small Acalypterates Recording Scheme >>

Currently little to tell, iNaturalist has 856 records at

https://www.inaturalist.org/projects/smaller-acalypterate-families

and when BRC set me up as verifier to the other families perhaps we'll be able to summarise iRecord figures. Maybe we can then grow our NBN Atlas dataset (779 records) at

https://registry.nbnatlas.org/public/show/dr2747

Darwyn Sumner, Nigel Jones & Steve Falk

Agromyzidae Recording Scheme



Barry Warrington has now transferred all the material from his Scratchpad website which was severely impacted by the Natural History Museum freezing to a new site at

https://agromyzidae.co.uk/

His crowdsourcing efforts proved successful thanks to BENHS and YNU.

Soldierfly Recording Scheme







The iNaturalist project is capturing a lot of interesting records, amounting to 12,699 now with 7 members. The scheme's NBN Atlas Open Data dataset is freestanding at

https://registry.nbnatlas.org/public/show/dp37 and shows 151,525 records, whilst the website at

https://soldierflies.brc.ac.uk/

is packed with other resources

Newsletter #10 in this Bulletin

Hoverfly Recording Scheme



Newsletter #75 in this Bulletin

David Iliff davidiliff@talk21.com

Stilt & Stalk Fly Recording Scheme



The freezing of this scheme's website by the Natural History Museum was rescheduled for June, it remains functional at

https://micropezids.myspecies.info/

Curiously the Newsletter issue 5, uploaded to ResearchGate at

http://dx.doi.org/10.13140/RG.2.2.25601.84325

reached 100 reads just before the UK launch via its inclusion in the last Bulletin, after which it rose to only 106 by the end of the year. Suggesting perhaps that there's a lot more interest worldwide in what we get up to.

The European iNaturalist site now has 26 members and 2.924 records; fun to monitor frequently during the flying season but declining to a trickle outside that. The UK site has 7 members and 389 records, There are a further 69 sets of images on iRecord but as I explained, there's no-one to verify those. The rest of the iRecord records number 180 now, I verified some during last year but it's clear from some odd names assigned that some of those uploading records are using outdated keys and taxa from ~80 years ago rather than the current recognised keys & taxa. The Open Data on NBN Atlas remains stuck at 6,409 (23-04) despite my iRecord verification efforts. Again I shall combine an iRecord download with other contributor's spreadsheets and submit directly to NBN Atlas this year in order to fix this glitch.

Darwyn Sumner www.inaturalist.org/people/202372

Cranefly Recording Scheme







Newsletter #42 in this Bulletin

John Kramer john.kramer@btinternet.com

Sciomyzidae Recording Scheme 🔖

When I started at the end of March the **Open Data** dataset at https://registry.nbnatlas.org/public/show/dr2518 stood at 3165, this rose to 4568 following my spring **iRecord** verification efforts once NBN had addressed their database infrastructure and BRC's submissions to them were able to continue.

There still remains a lot of verifying to do, all last season's **iRecords** plus those I left. If you've an eye for Sciomyzidae then get in touch and we'll arrange for you to verify some.



Coremacera marginata (female) [Sam Thomas from the DF Flickr group]

The **iNaturalistUK** project with 598 records has only 4 members which is surprising given the interest shown over the years in this group.

https://www.inaturalist.org/projects/sciomyzids-uk

Newsletter #7 was added as a preprint to **Researchgate** on 4th August. Add to the 44 reads by downloading it at

http://dx.doi.org/10.13140/RG.2.2.35768.11528

If you've a resolution to get more involved in a fascinating group in which you can actually find stuff fairly frequently then this is the one. We've got big guns deployed if you need them, Steve Falk has a comprehensive guide on his Flickr site (all linked in that Newsletter) and Stuart Ball has a superb key to download from our website. In fact Stuart is due to give another workshop as part of the Tanyptera project this year.

Finally my apologies to Mike Paskin who sent me a bundle of hand-written records. I will get around to digitising them once the typing injury goes away, think yourself lucky you don't type Mike (or saw and chisel English oak I guess.)

Europe

From the Corsica expedition recounted in previous Bulletins we now have a report on the Sciomyzidae from Jonas Mortelmans & Mark Pollett

Mortelmans J. & Pollet M. 2023. Sciomyzidae of the Our Planet Reviewed in Corsica 2019-2021 expeditions (Diptera). Bulletin de la Société entomologique de France 128: 597–604.

Published on Researchgate at https://tinyurl.com/4edkvxvv

The expedition found 21 species, doubling the checklist for the island and found many fascinating species.

Darwyn Sumner Ian McLean is now ianfgmclean@gmail.com

Empid & Dolichopodid

Your call to arms in the bulletin motivated me to try and do something about the nearly 6,000 Empid records awaiting verification. I've reviewed around 4,000 now and moved many to the stage where they can become open data

Nigel Jones (pers. comm.)



I discovered this iNaturalist project by chance when one of their expert team kindly identified one of my posted images.

https://www.inaturalist.org/projects/mozzie-monitors-uk-ireland

Set up last June by a Brazilian living in South Australia as part of a wider scheme, this UK project is attracting members like flies. Amongst regular UK iNat contributors is medical



entomologist Dr Ben Cull who specialises in our European fauna and tops the list of identifiers here.

Focus on the top six in 2024 if you want to race Sam Rees, Ian Andrews and Matt Vosper to the top of the "Most species" list. Species to target are Culiseta annulata, Culex pipiens, Aedes geniculatus, annulipes, A. cantans & A. detritus they can found quietly hanging about on vegetation if you're

careful, like A. annulipes illustrated.

Confusingly there are now three separate initiatives, this one, a formal UK Gov. one and Jolyon Medlock's Mosquito Recording Scheme.

Recording Scheme Newsletters

Having raised the idea of uploading Recording Scheme newsletters as **ResearchGate preprints** in the last Bulletin, you'll be interested perhaps in progress there.

I added two, my Micropezids & Tanypezids and the Sciomyzids (detailed above.) The site tells you the number of reads each has had: by the end of the year, 113 & 33 respectively. That's one amazingly good response for a tiny obscure group. By those measures Donald's Kelp Flies would do well, maybe we can persuade the little'uns to give ResearchGate a shot. One great outcome is that they get read by folk from all over the world

In this issue we've the big three plus a few notes in this section. If you have news and haven't enough for a newsletter then drop a line to the Bulletin editors and we'll add your piece here. Some we've not heard from in a while.

As for recording, please take note of the preferred system of each Recording Scheme, help keep them happy as they do an amazing job.

Other Projects

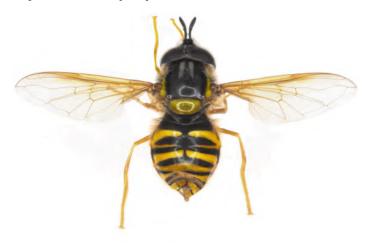
Steve Falk project

Plenty of valuable data from Steve's pre-2014 prolific surveying are still available if you've an interest. Extraction methodology, detailed instructions and source files are at https://micropezids.myspecies.info/node/307

Darwyn Sumner

Techniques

Necessity - the Mother of Invention: My lockdown projects



by Boyd Barr b340barr@btinternet.com

Inspired by incredible photographs in the Dipterists Forum bulletin, I decided during "lockdown" to develop ideas for entomological equipment not readily available and to build them using my engineering skills. In this article I describe a range of equipment and accessory kit that I displayed at the Dipterists Forum meeting at Edinburgh in November 2023. Please contact me (email above) to ask about fabrication of bespoke kit and any ideas you have for innovative designs.

The configuration shown in **Figure 1** is the result of an evolving design process and enabled me to become involved in the world of photo stacking, a system called "Zerene", attempting to achieve high-quality images intended for publication. First, I had to find an existing microscope capable of modification and possessing other unique features. I eventually chose the M15, a model produced in York by Cooke, Troughton and Simms. It met all the requirements but, crucially, was built with a clutch mechanism on the rack and pinion stage movement. The clutch eliminates the risk of gear damage when motor-driven. The ability to attach several stage designs, including rotary and other mechanical stages, was another advantage.

The modified M15 incorporates a stepper motor/gear system, the drive motor situated in a way as to enable engagement/ disengagement from the main gear using a rack and pinion system. Figure 1 shows a simple stage modified with a new transmitted LED lighting unit, with its own iris diaphragm and filtration system and using neutral density filters. The configuration shown is a Canon1000D with a Pentax Tak 50mm lens, and a Canon extension plus LED ring light. The lens configuration is capable of using existing microscope objectives with purpose-built lighting units. The remote-controlled electronic drive system is capable of 7 speeds. Speed 0 equates to 0.00063mm/sec; speed 7 gives 0.03879mm/sec. The speed ranges linearly between 0 to 7 with an interval of 0.00063mm/sec.. The photo of *Chrysotoxum arcuatum* shown above was taken using this image stacking system.

Using a programmable electronic timer for the camera set at 5 frames per minute gives 0.003165 mm/frame. Speed 7 gives 0.19395mm/frame. I am using old Canon 1000D cameras and only 10 mega-pixel sensors. My imagination runs riot when

looking at modern mirrorless Canon 40 mega-pixel, 30FPS. Expensive! At slow speeds this camera could achieve frames at less than one tenth of a micron. A small TFT screen is required to see frames during exposures; the video lead from the camera can be inserted into a larger screen.



FIGURE 1. The modified M15 microscope (side view)

Adjustable Linear Rail System. A linear rail system (Fig. 2) has the advantage of photographing insects of different sizes. The camera and stage are independently capable of being moved to desired positions to enable a wide variety of interchangeable lenses. Pictured is an inverted Bronica 75mm lens with Canon extension and adaptor rings. The camera lens can be quickly changed for STD microscope objectives, or others. The arrangement for necessary drive is a 12v programmable stepper motor drive, via lead screw connected to the mechanical stage/ specimen block, again using CTS, interchangeable staging. The slowest drive speed (1.8) gives 0.0044mm/sec travel. With the programmable camera timer set at 5 frames/minute this equates to 0.0528mm/frame. A high speed of "80" gives 0.2085mm/sec resulting in 2.5mm/ frame. An optional additional gearbox (not pictured) can be added to the stepper motor/lead screw to reduce the speed, giving capability of increments well below 0.001mm/frame. The current linear system requires a lot of desktop space, so I am working on modifications to allow this set up to be reconfigured in a vertical format.

Comparator Camera Unit. Another related piece of equipment (Fig. 3) was designed to enable the comparison of two specimens simultaneously – basically a comparator camera – again with multi-lens/lighting options The advantages I have found extremely useful are examination of wing cell/microtrichia; antennae segments and many other morphometric characteristics. Pictured are two small TFT screens - the video camera outputs also plug into a "screen splitter", providing two separate images on a large single screen. The two mechanical stages incorporate transmitted LED lighting with independent iris diaphragm and filter tray for neutral density filters etc.

Tethering

If you're a Nikon user who likes to shoot in a studio with your camera linked to your PC then you may have bought their Camera Control Pro tethering software. Great for stacking and demonstrating. It's been updated now and it's free, look for **NX Tether**. (ed)

[Canon equivalent has always been free]



FIGURE 2. Linear rail system

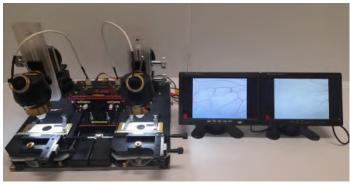
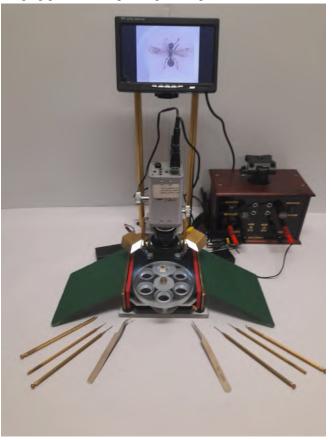


FIGURE 3. Comparator camera system

Genitalia preparation, imaging and dissection. The comparator camera design led to the fabrication of a simple camera system to trial various dissection requirements, again by using a light transmission stage with all the usual LED/ diaphragm/filter system. The stage (Fig. 5) is fitted with a recessed, 6-position,

rotatable platform which holds 6 shallow crystal watch glasses. This allows for quick and safer transfer of genitalia or other small body parts from one reagent to another. Again, image shows a small screen; when video signal is used with a larger screen the magnification increases enormously. I lose fewer genitalia using this than by the standard use of a stereo microscope! Furthermore, this system is well-suited to imaging genitalia and preimaginal stages.



 $\label{figure} \hbox{FIGURE 5. Rotatable platform for preparation of genitalia.}$

Pooters - for life I began designing various pooters with screwed brass fittings and glass tubes, as I dislike cork or rubber bungs inserted into glass. My pooters **(Fig. 4)** are designed to be unscrewed from both ends, allowing easy cleaning; they also incorporate a stainless-steel gauze in the suction end. The larger diameter "dumpy" types shown are very useful when your head is in the sweep net! Looked after they should last a lifetime.



FIGURE 4: A selection of pooters.

Accessory equipment. Figure 6 shows a variety of examination stages, very useful under long-arm stereoscopic microscopes. The larger unit in the centre is a multi-gimble unit which is rotatable, indexable in *x-y* axes for mechanisation and has the capacity to be fitted to the linear rail system and others.



FIGURE 6. Gimbal stages with potential for mechanisation.

Members

Membership Matters

By mid-December 2023 we had 494 paid-up members and 413 subscribing to the Dipterists Digest. We have received new subscriptions from 42 people and 14 resignations. 67 members are based outside the UK. It is hoped that the new pdf membership category will encourage more overseas members. Reminder e-mails about the new rates for 2024 were sent to those members with registered email addresses. If you did not receive one it is probably because:

- a) we don't have your email address
- b) the email address we do have is out of date
- c) the email is sitting in your spam folder.

Communication by email is by far the easiest way to contact me regarding membership matters and for me to send notices about DF matters.

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

103, Desborough Road,

Rothwell, KETTERING, Northants, NN14 6JQ

Tel.: 01536 710831

E-mail: showersjohn@gmail.com

Membership and Subscription Rates for 2024 have changed from 2023.

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

Dipterists Forum Subscription Rates 2024

Regrettably, we have had to increase our subscription rates from the 2024 subscription year. This is necessary to cover increased printing and posting charges. The last rate increase was in 2014. We recognise at a time of high inflation that members do not need another price increase and we have decided that we will offer pdf files for the Bulletin at the current rate. The rates for 2023 will remain unchanged.

Members and Subscribers are reminded that subscriptions are due on 1st January each year. Our new rates will be:

	2024
K rates: Membership + hardcopy Bulletin	£12 pa

Membership + pdf Bulletin	
Membership + hardcop Bulletin and Dipterists Digest	y
Membership + pdf Bulletin hardcopy Dipterists Digest	+

Overseas rates

from overseas.

Membership + hardcopy Bulletin
Membership + pdf Bulletin
Membership + hardcopy
Bulletin and Dipterists Digest
Membership + pdf Bulletin +
hardcopy Dipterists Digest

£22 pa

£18 pa

£8 pa

£30 pa

£8 pa

£26 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

At present we are not offering the Dipterists Digest in pdf format

At a glance - (Ed.)

Membership inc.	Bulletin	Dipterists Digest	2024	
UK	Hardcopy	No	£12	
	pdf	No	£8	
	Hardcopy	Yes	£26	
	pdf	Yes	£22	
1	Hardcopy	No	£18	
	pdf	No	£8	
	Hardcopy	Yes	£30	
	pdf	Yes	£26	

Subscribers who opt for pdf versions of the Bulletin will be able to download their copy from dipterists.org.uk when it becomes available. (approximately mid-March and mid-September) Pdf files will not be emailed to subscribers but a notice of publication will be placed on the website

Members who pay by standing order will have to amend their bank instructions to pay the new rate for 2024. If you do not wish to change your bank instructions via online banking, a pdf file of instructions can be downloaded from the website. Please sign it and send directly to your bank.

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.

John Showers

New Membership Secretary needed for 2025

I would like to stand down as Membership Secretary at the end of 2024 so we are looking for one or two volunteers to take over. I am willing to help a new Membership Secretary find their feet. It would be possible to to split the job into two roles:

- a) Handling payments, queries and maintaining the membership spreadsheet
- b) Producing mailing lists for both email and postal communications

Both roles would require use of spreadsheet software (either Microsoft Excel or LibreOffice Calc). The latter software is free to download and works exactly like classic Microsoft Office. All expenses can be claimed back from DF.

If anyone is interested please contact me. I can send more details if required.

Membership benefits

All clubs have some costs, cast your eye over our last financial statement for details where you'll see what they are and how your subscription covers them. The kindness of others also means we've some income to augment those costs. Businesses, charities and community interest companies incur costs, we minimise these by being a club - no paid employees, just volunteers.

The main benefit you receive as a member of Dipterists Forum is the latest newsletter (this Bulletin) which tells you about everything we are currently doing i.e. all the other benefits. Older Bulletins are available to anybody - Open Access.

To keep your costs down we are currently offerring a "torn and soggy" discount on the Bulletin (that's how Adrian Plant gets his copy in Thailand), you can save us an envelope, BRC a stamp and you £4 by specifying pdf only for your Bulletin.

Subscribers who opt for pdf versions of the Bulletin will be able to download their copy from dipterists.org.uk when each issue becomes available.

We can't say exactly when that will be, Jane observes "electronic versions should be available on the members-only area of the website in mid-February and mid-September and that members should check the website around then". We have also modified the News section on the opening page of our website to advertise its availability promptly.

Fly zone

Contacting us

The inside front cover of this Bulletin has all the contact details you should need.

Members

See John Showers instructions above if you want to join and support us (and get copies of this Bulletin.) Don't forget we've also a Forum on our website where you can raise topics.

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

Meetings

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/

We invariably organise both a workshop in February and a Summer Field meeting each year. Occasionally, shorter Spring and Autumn meetings may be held too.

Meeting participants will be emailed with details once booked.

Bulletin

Contributing

For Bulletin related matters, information or sending articles for the next issue, then

email both Darwyn Sumner & Judy Webb

[Include "bulletin" in the title so's we don't lose them]

We'd also much appreciate your feedback.

Mark Welch wants to know about anything conservation related and Jane Hewitt needs to be kept informed about

Diptera related issues in order to do her Secretary stuff.

Deadlines

Spring Bulletin - 31st December Autumn Bulletin - 31st July

Newsletters: Camera-ready copy only please

Downloading

Bulletin is in 3 parts: Contents are membership-only, Newsletters and Recording Schemes brochure are free. Details on contents page.

Note that the Contents section is interactive, no need to type out urls.

Dipterists Digest

Contact Peter Chandler

Recording Schemes

As for flies in particular, bring those to the attention of the Recording Schemes. Contact details are on the back pages which can also be downloaded as an interactive pdf so that you can follow all their links to websites, recording initiatives and newsletters. For more recent Recording Schemes see recent Bulletins, the iNaturalist site below or our website.

Photographs

Photographers may participate by uploading their images either as records to the sites preferred by each Recording Scheme or as set up for our expeditions or simply to our Flickr group. Our additional iNaturalistUK initiatives are summarised at

https://www.inaturalist.org/projects/dipterists-forum

Bursaries

The Dipterists Forum holds an annual weekend course, covering a specific family of flies in detail, at the Preston Montford field studies centre near Shrewsbury. The 2024 course will be about Tachinid flies. It will run from Friday 9th to Sunday 11th February.

The Forum also has annual residential Summer field meetings lasting for one week. The 2024 meeting will be based in Lancaster from the 22nd to the 29th June. Attendees spend their days in the field collecting and observing flies and evenings in a laboratory where they can identify their catches alongside other dipterists. Beginners are made very welcome and can gain valuable knowledge from more experienced members.

We offer a small number of bursaries for each of these events, awarded on a competitive basis. Bursaries cover half the total cost of the course/meeting (full board for the Preston Montford meeting and half-board for Lancaster). If you would like to apply for a bursary for either (or both) of these events please send your application by e-mail to me, John Mousley, at john-sally.mousley@ntlworld.com.

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

Applicants must be members of the Dipterists Forum at the time of their application. The closing dates for applications are Friday 1st December 2023 for the Preston Montford course and Friday 16th February 2024 for the Lancaster Summer field meeting.

John Mousley

Eulogies

Mike Pugh

17TH JANUARY 1928 - 16TH DECEMBER 2023



Mike Pugh at the St Agnes, Cornwall, field meeting, July 1983 (photo Austin Brackenbury; Fig. 4 in 2nd edition of A Dipterist's Handbook; Mike is also in the group photos in Figs 1 and 2).

Mike was a member of the Forum since its inception. He attended most events throughout this time, including summer and autumn field meetings, annual dipterists days and workshops at Preston Montford, so was well known to many members. The photo on page 22 of the autumn 2022 Bulletin, taken by Mike, shows the other 8 who took part in the second autumn field meeting in 1976 at Ashdown Forest, Sussex and who were, with Mike, the nucleus of subsequent autumn meetings for many years. Mike collected Diptera generally but was most interested in calyptrates, especially Muscidae and Anthomyiidae. He lived at Solihull in the West Midlands and collected locally, building a good species list for Clowes Wood, one of the sites we visited during the very successful 1984 autumn meeting, which otherwise concentrated mainly on Wyre Forest. As we didn't have the numbers at the autumn meetings to warrant using field centres, we usually adapted our guest houses for evening sorting of catches, but on this occasion Mike arranged for us to use the local Bishops Wood field centre near Stourport-on-Severn. He related that he had recently booked lunch at a local pub for a party of 14 visiting the centre, when there was confusion on arrival at the pub as they had been expecting a party of clergymen – Bishop Wood and 14 parsons. Mike passed to me any fungus gnats he caught and I was

pleased to name one new to science that he found at Chudleigh Rocks in Devon on the October 1980 field meeting as Sceptonia pughi; this is still a rarely recorded species. When I became editor of Dipterists Digest Mike volunteered to do proof reading of the text, and he continued to do this efficiently for more than 20 years - he was also always ready to help with advice on any problems related to computers. As long ago as 2012 Mike, having given up active work on Diptera, decided to dispose of his entomological library, which was dispersed to Forum members, and offered his collection to the BENHS. This offer was accepted and I picked up most of it when we were in Birmingham for the 2015 AGM; the exception was the Muscidae, which were given to James McGill to assist with his work on that family. Nevertheless, Mike remained a Forum member and continued to attend some events - he was at the Drosophilid/Sciomyzid Workshop in 2017 and continued with the proof reading until 2020. I was in touch with him by email as recently as 13th December - he told me that 2 weeks previously he had enjoyed a zoom meeting with Roy Crossley and Roger Morris. When telling me the sad news, his daughter Sue said how much he had valued keeping in touch with his old friends in the Forum. Mike was an excellent companion in the field and will be greatly missed.



Mike Pugh at acalyptrate workshop, Preston Montford, February 2015.

Reference

Chandler, P.J. 1991. New species and additions to the British list of the fungus gnat genera Zygomyia Winnertz and Sceptonia Winnertz (Diptera, Mycetophilidae). British Journal of Entomology and Natural History 4: 143-155.

Peter Chandler

Bernhard Merz 29TH JULY 1963 – 14TH FEBRUARY 2023



Bernhard Merz in his office at the Natural History Museum in Geneva on July 30, 2005 (from Cuccodoro & Landry 2023, with permission of the publishers)

Bernhard was a Swiss dipterist who specialised in acalyptrates, including Pallopteridae and Lauxaniidae, but his particular focus was the Tephritidae, the subject of his doctoral thesis. Tephritid enthusiasts will note that the genus Merzomyia, coined by the Ukrainian tephritid specialist Valery Korneyev, bears his name. He is a great loss to dipterology internationally; we first experienced this loss ten years ago when he had to give up active work on Diptera, but ill health had already begun to impact him by 2008. He will perhaps best be remembered by those of our members who attended the Spring Weekend indoor meeting at Cardiff on 8th May 2004 (see Bulletin No 58, Autumn 2004, page 15), where Bernhard gave a talk on the development of dipterology in Switzerland. The situation there sounded encouraging until he said that, now aged 40, he was the youngest dipterist in that country - hopefully others have been recruited since. A recent obituary (Cuccodoro & Landry 2023)

provides details of his career. He was based at Zürich as a museum curator and lecturer until 1998; he then moved to Geneva, to become curator at the Natural History Museum there, where he remained until his untimely need to retire in 2014.

My recollections of him are mainly from a visit to Switzerland in 1997, when I stayed at Bernhard's flat for a week while checking the fungus gnats and flat-footed flies in the museum collection at Zürich, before travelling to Neuchâtel to do the same there; this was for contributions to the Swiss checklist, then in preparation at the same time as ours. During that visit we had a day off for fieldwork, and after doing well at a wooded site near Zürich, Bernhard said we should go to the nearest alpine meadow. I was driving and we made our way up into the hills. On arrival we found cows, hundreds of them, with bells around their necks, jingling away; with the vegetation chewed down to the ground there were no flowers or insects, so we drove down again. On the way down through forest we spotted a roadside bonfire. Bernhard said "I must catch some of your smoke flies". We rapidly pulled up and he jumped out of the car to sweep his net through the smoke, gleefully returning with Microsania. It was later identified as M. vrydaghi, an addition to the Swiss list and the first national record for the genus, so the day was redeemed. I saw Bernhard again at the International Congress of Dipterology at Oxford in the following year. He also came with the coach party to the post-congress field meeting at Wychwood in Oxfordshire; this wasn't well chosen for a visit at this time of year as all the rides separating mostly impenetrable blocks of coppice had been recently mown and insects were sparse, almost a repeat of the alpine meadow incident. The obituary also mentions that he had a passion for tea, "which he could discuss for hours". Bernhard produced a large amount of valuable work on Diptera, and his loss is particularly felt now that his former colleagues among the Swiss dipterists are preparing an update to their national checklist.

Reference

Cuccodoro, G. & Landry, B. 2023. Bernhard Merz (29.VII.1963–14.II.2023). Alpine Entomology 7: 275-277.

Peter Chandler



Lispe tentaculata [Ian Andrews]



Anomoia purmunda [John Showers]

Meetings

Reports

Regional Groups Other regional reports

We'd be happy to feature reports from other regions, you needn't be so well coordinated as the Devon Fly Group nor even ramble together.

Leicestershire Rambles

There are at least four keen dipterists in VC55: me, John Kramer and Ray Morris. Not an organised team of ramblers like the other two regional groups though I do bump into John Mousley in the field on occasion. Two of us are kept busy on other writing tasks but I'll not miss a chance to tell a tale or two.

SY First from me is the iNaturalist site-based project detailing several locations in VC55, find it at

https://www.inaturalist.org/projects/vc-55-leicester

where you'll find my local snapping in favourite local spots. An unrestricted range of taxa of course, appealing to general naturalists; we all photograph dragonflies too so those records are very interesting. It serves to answer the question of the whereabouts of my local records since I retired from managing the local records centre. If you're visiting, you'll find some nice spots - as Matt Vosper has done; if you're local then join the project and ask me to add other favourite sites.

John Kramer of course edits the Cranefly newsletter and Ray Morris' story is below

Darwyn Sumner

Ephydridae in the Leicestershire county collections

Whilst researching this interesting group of little flies in VC55 (Leicestershire & Rutland) as part of a project to establish baseline data for future recording effort, I have been cataloguing the Diptera collections held at the County Resources Centre at Barrow on Soar. I was not surprised, but a little disappointed, when I found that there were no local specimens and only examples of six species from elsewhere. I thought it might be useful for those interested in the family to be aware of these latter specimens. Whilst species identity and locations have been given on labels it seems that there are no records of the actual recorders.

- Notiphila cinerea (ref CRC 42/10/1C) Clevedon, Somerset 27/05/(19)47, three specimens
- Parydra coarctata (ref CRC 429/6B) Filton, Somerset 10/09/(19)48, 1 specimen
- Ochthera mantis (ref CRC42/10/10B) Sharpham Moor, Somerset 28/08/(19)48, three specimens
- Pelina nitens (ref CRC 42/10/2A) Ham Green Marsh, Somerset 19/04/(19)47, one specimen
- Scatella silacea (ref CRC 42/10/1A) Ashurstwood, East Sussex 01/07/(19)07, seven specimens
- Setocera micans (ref CRC 42/9/6A) ?Sharpham, Somerset 28/08/(19)48, 1 specimen

If anyone has records of the family originating from VC55 I'd be very happy to receive them!

Ray Morris ray@cactusbob.net

Northants Diptera Group

A combination of unavailability and poor weather conditions curtailed the group's meetings but individuals continued to record diptera into the Autumn. Preliminary visits were made to the re-wilding site near Corby and to a country park/nature reserve in the Nene Valley. Neither site has produced anything unusual but small areas in each look promising.

Less common hoverflies reported during the second half of the season included *Xanthandrus comtus* and *Scaeva selenitica* from Yardley Chase and *Didea fasciata* from a private garden in the North-west of the county.

Few flies were retained from the moth traps at Pitsford Water Nature Reserve, but a batch in December produced the county's first *Sylvicola fuscatus*.

John Showers

Naturalist site-based project at A start has been made on a VC32 iNaturalist site-based project at

https://www.inaturalist.org/projects/vc-32-northampton

Devon Fly Group



Another year flies by but 2023 is special since we came into existence ten years ago. As always, things began with our annual indoor meeting at Woodah Farm thanks to the kindness of the Devon Wildlife Trust. After a long gap since the last field meeting the previous October, it is always good to meet each other again. Eleven of us turned up and enjoyed a wide range of presentations including slow motion videos using the Olympus TG-6 camera, flies visiting a flowering ivy hedge, the taxonomic trouble with *Medetera*, horsefly eyes, rot-hole fly research as well as the traditional DFG Fly Bingo which was won by Geoff Foale. The field season programme was also discussed.



Meetings

The first field meeting of the season was the shingle beach and soft cliffs at Branscombe Mouth on the East Devon coast. There was a strong and cold wind on the day but we did rather well, heading east of the car park to investigate the tide wrack as well the vegetation/seepages at the base of the cliffs. The tide wrack consisted chiefly of small dried clumps of seaweed which were shaken inside a sweep net as well as searched with a hand vacuum. This produced a typical assemblage including Coelopa frigida, C. pilipes, Malacomyia sciomyzina, Orygma luctuosum, Thoracochaeta brachystoma, T. erectiseta and T. zosterae. Other noteworthy species found through various methods were Bibio johannis, B. reticulatus, Dilophus febrilis, Dolichocephala ocellata, Dicranomyia lackschewitzi and Thaumalea verralli. We were glad to get out of the cold wind and enjoy a hot drink, cake and banter in the beach café!

Unsurprisingly, a large number turned up for the May meeting at Brimpt's Farm & Babeney Mire since the rare Bog Hoverfly (Eristalis cryptarum) was the target species. It was an explorative meeting as the location was a possible site for this species. The weather was perfectly ideal but the habitat did not look right. Therefore, we did not find a new site for it. However, it was still a productive meeting with plenty of spring species being found including Alliopsis billbergi, Cheilosia bergenstammi, C. fraterna and C. nebulosa. A couple of other notable species found were Pipunculus fonsecai and Platypalpus caroli. Sweep netting and a hand vacuum scored a nice set of sphaeroceridae with the notables being Opalimosina denticulata and Phthitia longisetosa. All in, a hundred and seventeen species were recorded.



For our June field meeting we did the unprecedented by going into a neighbouring county, Somerset, to visit Steart Marshes which is run by the WWT. This is an extensive grazing marsh on a spit sandwiched between the River Parrett and the Bristol Channel. There was a heatwave on but the coastal breeze made things bearable.

The undoubtable highlight was finding plenty of the large tabanid, Atylotus rusticus. A couple of other uncommon species that delighted us were Sphaerophoria rueppellii, Sarcophaga sinuata and Melieria picta. Steart certainly was good for soldierflies such as Oplodontha viridula, Oxycera trilineata, Stratiomys singularior, Nemotelus notatus and N. uliginosus. I have a feeling we might visit this place again.

As for July, we had a field meeting at Exminster & Matford Marshes delayed by a few days due to inclement weather. The



rain still played a part on the day and just three of us turned up to explore the RSPB reserves at the northern end of the Exe Estuary. The weather cut our meeting short but our efforts still produced a hundred and forty-seven records of exactly a hundred species. The rarities were Sarcophaga villeneuvei from Exminster Marshes and Sarcophaga sinuata from Matford Marshes. Other notables included Zaphne ambigua and Lonchaea mallochi from Exminster whilst Matford added Oxycera rara, Dorylomorpha hungarica and Colobaea punctata.

During discussions at our indoor meeting earlier in the year, we learnt there was a decent population of Asilus crabroniformis (Hornet Robberfly) on Bicton Common, so that's where we visited in August. Another species to be looked out for was the small hoverfly, Pelecocera tricincta with its distinctive paddle shaped antennae. We were fortunate to find a single male of the robberfly on our way back to the car park near the end of the meeting! Sweeping the yellow flowers of Tormentil on the edges of the paths for the hoverfly was in vain, or so we thought. Back home, inspection of the catch revealed several specimens. It really is a tiny species! There were a few other rare flies found such as Tachytrechus consobrinus, Campsicnemus compeditus (Dolichopodidae) and Blaesoxipha (Sarcophagidae) to cap off an interesting day in which eighty-one species have been recorded or submitted so far.



Ashclyst Forest provided the setting for our September field meeting. The rain had already shifted the meeting from Saturday to the Sunday and was still doubtful. A last-minute call to go ahead proved a wise bet as we managed to catch some bits in between showers. Five of us turned up and enjoyed some good banter before rain ended play after lunch. With our nets getting wet anyway, Richard Lane decided to use his as a pond dipping net for aquatic larvae. The catch provided for fascinating discussion. Nothing exceptional was found which isn't a surprise considering the wet vegetation but it was good to find *Rhingia rostrata and Lipoptena cervi*.





The final meeting of the year took place at Harpford Wood near Newton Poppleford in October. Again, the weather threatened to put the kibosh on things but it turned out really nice on the day. We were even able to enjoy watching many flies coming to flowering Ivy before entering the wood. It was a rewarding site with seventy-five species so far. An effort to find platypezidae (flat footed flies) on leaf surfaces yielded just two, *Agathomyia unicolor and Platypeza aterrima*. Another focus of attention were leaf miners with nine species recorded and the highlight was *Liriomyza pascuum* on Wood Spurge leaves.

There were several extracurricular midweek meetings so our collective accumulation of records will testify to the benefits of forming a local or regional group. We will formally celebrate our tenth anniversary with cake and fizzy at our next indoor meeting next March. As always, everyone is welcome to join the group by signing up to our newsgroup. If you happen to be on holiday in or visiting Devon you are most welcome to join one of our field meetings too.

Andrew Cunningham

SY VC3/4 The number of sites on the DFG map project is steadily growing as Andrew & I continue to add them:

https://www.inaturalist.org/projects/devon-fly-group https://www.flickr.com/photos/ajc321/sets/72177720313704665/

Malloch Society



Malloch Society visit to the Isle of Eigg June 2023

Because it seemed like an interesting place to visit, four Malloch Society members (Geoff Hancock, Steve Hewitt, Ashleigh Whiffin and Donald Smith) spent five days on the Isle of Eigg from 26th-30th June 2023, staying in the comfortable hostel-type accommodation of the Glebe Barn.

The uphill walk to the hostel from the ferry began promisingly with flies brazenly showing themselves on the roadside flowers in the morning sun, relatively undisturbed by net or pooter – we were weighed down by a large number of bags.

One of these encumbrances, lashed for ease of carrying to the rack of a bicycle, turned out to be a binocular microscope, a very useful thing to have along.

The first afternoon the party joined Norah Barnes, the Scottish Wildlife Trust warden, to visit the south coast of the island to count transparent burnet moths (*Zygaena purpuralis* (Brünnich, 1763)), which were abundantly sporting on the sunny thyme-dotted sward near Massacre Cave, and also spotted later in the week on the more remote eastern slopes of Struidh. The next day was more taxing with persistent drizzle, and collecting was restricted to the mixed woodland around Galmisdale, and uninspiring searches for insect corpses on the window ledges of the church, museum and swap-shop. Clearer weather in the remainder of the week saw the party brave the steep eastern slopes with its promising wet flushes beneath towering geological splendours (dipterists), and quad-bike assisted searches for pesticide-free cattle

dung on the slopes below An Sgurr (coleopterist), the Sgurr being the geological pin-up for the island. The final day saw the party exploring boggy woodland at Blar Dubh, the beautiful glacially-sculpted lochan below and the tempting waters of Laig Bay with its narrow strip of dunes.



Word seemed to get around quickly that there were strange people with nets on the island, so that we didn't always have to explain what we were up to, though that was not quite so easy in the Glebe Barn. Other parties arriving late in the week were disgruntled, affronted, bemused etc. to find chilled or frozen insects in the kitchen fridge-freezer, as well as one of the two dining tables fully occupied with insect boxes, tubes, pins and a daunting microscope. We held our nerve, but were forced to take dinner on our own, slightly tidied, specimen table.

The previous history of recording on the island can be told fairly quickly. A visit to the island in July 1939 by biology students from Edinburgh University resulted in a list of 80 species of diptera (D.K.M.Kevan (1941) The insect fauna of the Isle of Eigg, Entomologist 74:247-254). There were visits to the island by A.M.Hutson in June 1969 and May 1970 (details of his fungus gnat specimens in the Natural History museum collection were kindly provided by Duncan Sivell), and by Peter Skidmore in July 1981 (two additional dolichopodid records kindly provided by Laura Trinogga, Doncaster museum). When P. Skidmore published his monumental survey A review of the Diptera of the Western Isles of Scotland (Dipterists Digest (2008) 15:99-194), he was then able to list 175 species from 42 families as occurring on Eigg. Observations by John Chester, Scottish Wildlife Trust warden on the island contributed observations of 20 species between 2004 and 2015, and a few additional records are available on NBN and iRecord, or were kindly provided by David Horsfield, Kenn Watt (Scottish hoverfly database) and Iain MacGowan (Skidmore dolichopodid records).

Putting all these sources together, we have now compiled a spreadsheet that includes 309 species in 53 families. Amongst the findings were a second record for the island (the first being the previous year) of *Sicus ferrugineus* (Linnaeus, 1761) (Conopidae) at Massacre Cave, and a female *Spiriverpa lunulata* (Zerterstedt, 1838) (Therevidae) in the dunes at Laig Bay, an unusual habitat for this typically riverine species.

Craneflies were extremely low in numbers which was probably due to a prolonged period of dry and hot weather prior to our arrival. Several common species expected to occur were not found, for example *Erioconopa trivialis, Rhipidia maculata, Dicranomyia* spp., *Molophilus appendiculatus* and *Tipula oleracea*. Only after a short rainfall did *Limonia nubeculosa* appear in very small numbers. These were all found on previous entomologists' visits. Nevertheless, ten limoniids and two tipuilds were added to the Eigg list. One historical record of interest is *Tipula grisescens* collected by A.M. (Tony) Hutson in April, 1969. A northern and western montane species normally found over 600m but not known to occur at sea level.

We intend to publish a full list, but before we do this, request that anyone with personal records from Eigg, or who knows of other sources of records, contact the authors.

Geoff Hancock, Steve Hewitt, Ashleigh Whiffin and Donald Smith

Exhibitions & Fairs

Derbyshire and Nottinghamshire Entomological Society

Dipterists Forum at the DaNES Insect Show

After a COVID-enforced break of several years, on Saturday 11th November the Derbyshire and Nottinghamshire Entomological Society (DaNES) held its annual Insect Show at Nottingham Trent University Brackenhurst campus near Southwell. I took the DF stand and had an excellent day at the event. There were a large number of local and national societies represented as well as a series of talks about local projects. It was great to meet DF members from the eastern side of England - including our Lincolnshire correspondent. A box of fly



specimens proved very popular with those visiting the stand. In the event feedback, one attendee reported that their favourite insect of the day was the Bee-fly. Few of us would argue with that! Assuming the event doesn't clash with our AGM, I shall make the early morning trip across Derbyshire again next year.

Jane Hewitt

Staffordshire Invertebrate Science Fair

March 2nd 2024 Staffordshire University

Leek Rd Campus, Stoke-on-Trent ST4 2DF



Annual General Meeting

Minutes of the Annual General Meeting of the Dipterists Forum, 18th November 2023

National Museums Scotland, Edinburgh

1. Apologies

Received from John & Barbara Ismay, Peter Chandler.

2. Minutes of the 2022 AGM.

It was proposed that the minutes of the 2022 AGM be accepted: proposer, Zoë Adams; seconder Rob Wolton. The minutes were duly accepted.

3. Chair's Report.

The chair then presented her report on the Forum's activities during the last year.

I started last years report talking about how bad global news had been and I feel that this past year may have eclipsed that. The State of Nature report painted a bleak picture and that was without including many species of Diptera due to a lack of data on range, habitat, or change - this is not due to the efforts of all who record flies but mostly due to the lack of serious investment in long term monitoring and assessment. We also heard of that once again Coul Links was being targeted for development to name but one of the many pressures that UK Diptera are facing. But thankfully there are many incredibly talented and dedicated individuals to help accumulate and disseminate information about these rather lovely creatures. Mark Welch and Judy Webb continue to keep an eye on matters of conservation importance for the DF with regular updates in the Bulletin.

I would like to thank all those on the DF committee. This year has been as active as the last in terms of field visits, training courses and recording. I would very much like to thank Rob Wolton for his continuous efforts. Rob, as well as being a steady hand to my wobbly ship, instigated the Speyside Diptera Review and has contributed much to the day to day running of the organisation, including just this week, sorting the insurance. A necessary piece of admin completed for a group of folks who swing nets precariously and seek out flies in many a tricky location!

Once more I would like to highlight the work of both our treasurer, Phil Brighton – a dab hand with keeping our accounts up-to-date but also for producing accessible reports and graphs, and our membership secretary, John Showers, who has the unenviable task of keeping abreast of the membership's comings and goings. Much debate was had on the committee about increasing the membership rates due to a rise in pretty much everything and thankfully these two have been able to organize the upcoming changes in 2024. Zoe Adams organised a very successful hybrid AGM and Dipterists Day last year at the Natural History Museum, London: all of the presentations are available, alongside many more, on the DF YouTube Channel. And for the second year in a row the Spring workshop was organised by Zoe to celebrate the publication of a long-awaited book. This year's training course was on Fungus gnats with Peter Chandler being ably assisted by Vladimir Blagoderov - please buy the book, it is fabulous. Sadly, I was not able to attend much to my annoyance but many of my unidentified material came back with names, so I was very happy, as I heard that the actual participants were. Here's to a successful Tachinidae Course next year.

Again a very successful Spring meet up was organised and much thanks to the Wiltshire Wildlife Trust, Anthony Bainbridge, Rob Wolton, George Prior-Palmer as well as Jane Hewitt and Marc Taylor (who weren't able to attend). Having field sites that warned of bombings added a certain amount of jeopardy to the proceedings.

Jane went on to organise a summer meeting in the Gower, South Wales, where over 30 people attended, and our thanks are extended to Professor Mary Gagan and her team for hosting the DF at the University of Swansea. The DF also helped collect material for Darwin Tree of Life and UK Bar tree of Life during both the spring and summer meetings - from the summer meeting 463 specimens (326 species) were frozen of which 158 specimens (119 species) were Diptera with 50 species new to the project! A great response from all those who attended this field meeting in what has been described as periodic (and unforgiving) showers. Various other field meetings were

organised by members of the Dipterists Forum - the weather at Roger Morris's autumn meet up apparently made the Swansea trip seem like a sunny beach holiday.

Darwyn Sumner has continued to produce the Bulletin, covering a range of Dipterological topics. Again, I request more contributions from all DF members to keep this Bulletin interesting and refreshing; the more flies the better. Peter Chandler remains as editor for the Digest and receives enough varied content from members to produce a stimulating read. This well edited journal continues to highly informative pieces including articles on new species to the British Isles. Martin Harvey continues to maintain and update the website. Thanks also go to all who add content to our site — images, news, reviews and so much more.

Lastly, a special thanks to Jane, whose title as Secretary does not convey how much work she undertakes for the Society. On behalf of the committee, the members, and especially me who knows how much work you undertake, please accept our thanks.

And thank you to all of you, whether on the committee or not, that have provided support to the Dipterists Forum throughout the year. This society is only as successful as its members, and although biased I feel that ours are rather good.

Finally, our congratulations go to Alan Stubbs on being awarded an MBE for services to invertebrate conservation. Alan, you continue to be an inspiration for us all. We also give our best wishes to Malcolm Smart who, along with his wife, has relocated to Australia to be closer to family. We are grateful to Malcolm for everything that he contributed to the DF and for being a source of entertaining stories, many of which seemed to involve him falling into ditches!

4. Treasurer's Report

The Treasurer, Phil Brighton, presented the accounts for the year ending 31st Dec 2022 (see Bulletin 96 p27 for his full report). The Treasurer reminded members about the increase in subscription rates for 2024. The accounts were duly accepted (proposer, Mark Welch; seconder Martin Drake).

5. Dipterists Digest Editor's Report

(provided in advance by Peter Chandler and read out to the meeting by the Chair).

Compared to 2022, when the publication of both issues of the Digest was relatively early, in January and July, this year's issues were published on 14th March and 31st October. The first issue was apparently still too early for many to have paid their subscriptions for 2023 and the same principle was followed as in 2022 in sending that issue to everyone who had subscribed in the previous year. This is clearly unsatisfactory in determining print runs, which have fluctuated between issues. Printed copies of the first issue have, nevertheless, run out due to the need to supply it to new subscribers, while a smaller print run of the second issue resulted from a lower number of subscribers (406) by October, compared to the final total for 2022 (431). To attempt to resolve this problem I have been asked to delay publication of the first 2024 issue to a later date, yet to be determined in consultation with the membership secretary.

The 2023 issues both had the maximum number of 126 pages. Articles and notes are continuing to be submitted at a steady rate. There are presently 18 items in various stages of editing, review and revision. These amount to about 180 pages of text so, as was the case this time last year, there is already more than enough to fill an issue. They include some longer items, which have been accepted, but in order to reduce delays in publication of shorter items in future acceptance of longer papers will be dependent on what is already awaiting publication.

I thank all those who continue to support the journal with a wide range of contributions, and in particular the new authors who have appeared in this year's issues. I am also grateful to Julie Locke and Tony Irwin for proof reading and to Andrew Halstead for efficient distribution.

6. Any Other Business

No other business was raised.

7. Election of Officers and ordinary members to committee

The Officers and Ordinary Members proposed for re-election or election this year.

Officers

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

Ordinary Members for re-election (elected 2020)

Tony Irwin John Mousley Marc Taylor

Already elected (elected 2022)

Victoria Burton Chris Raper

The meeting voted unanimously to elect the officers and members of the Committee (proposer Martin Drake; seconder Louise Hislop).

9. Thanks to our hosts.

The Chair thanked the National Museums Scotland for hosting the meeting and the Malloch Society, Vladimir Blagoderov and Ashleigh Whiffin for their very efficient help in organisation of the day.

The meeting closed at 12:40pm

Annual Meeting

Saturday 18th November 2023 National Museums of Scotland, Edinburgh

Dipterists Day with the Malloch Society

By all acounts a highly successful meeting. We've received the following reports from those attending and collated them all into a comprehensive account (Eds.)

The following thanks from Ian Strachan of the Malloch Society were passed to Zoe Adams who organised the event and Victoria Burton who managed the online technology.:

Hello! It was very nice to meet you too, and other
Dipterists from south of the border, the whole event was
very inspiring for me. I have to say that the Dipterists
Forum is a great organisation from my viewpoint,
especially the Bulletin, also the Recording Schemes, online
keys, videos, Dipterists Digest etc. I really appreciate all
the work that goes on to make it all happen - including
the meetings of course



Meetings

Montane Diptera

Iain MacGowan (NMS & Malloch Society)

Montane Diptera (Iain MacGowan)

Only higher Diptera were considered in the presentation. "Montane" refers to terrain lying above the potential treeline. These montane habitats include Racomitrium heaths, pools and flushes, upland fens with basic flushes, dwarf shrub heaths, river and loch shores. In his talk Iain provided a UK-wide context for the Scottish studies: montane terrains occur in NW Highlands, Grampian, Southern Uplands, Snowdonia and Cambrians, Pennines. He recognized three groupings of Diptera:



Montane habitat in the Cairngorms;

- I.A "Widespread Group": 10 species occurring in at least three of these UK montane regions: Rhamphomyia morio (Empididae), Platycheirus melanopsis (Syrphidae), Scoliocentra scutellaris (Heleomyzidae), Calliphora stelviana (Calliphoridae), Gonatherus planiceps (Scathophagidae), Alliopsis atronitens (Anthomyiidae) and four muscids Thricops aculeipes, Thricops hirtulus, Phaonia meigeni, Phaonia subfuscinervis.
- II. A "Highland Group": 8 species confined to the Scottish Highlands including the dolichopodids *Dolichopus maculipennis and Hydrophorus pilipes*, and the empid *Clinocera nivalis*.
- III. A "Grampian Group": 7 high-altitude species restricted to the high mountains of the central Grampians, with several species occurring above 1000m altitude, e.g. *Cheilosia sahlbergi* (Syrphidae), *Rhamphomyia hirtula* (Empididae), *Wiedemannia simplex* (Empididae), *Okeniella caudata* (Scathophagidae) and *Zaphne spiniculus* (Anthomyidae).

In 1982, David Horsfield started a systematic study of montane Diptera in Scotland, primarily focused on the Cairngorms region. Since then, regular sampling of flies for a range of montane habitats has been carried out continuously by members of the Malloch Society. Their studies have provided an important temporal baseline for recognizing longer-term faunal variations that correlate with environmental changes. In 1997 the Malloch Society published a report authored by David Horsfield and Iain MacGowan:

A Preliminary Assessment Of The Distribution And Status Of Montane Brachycera And Cyclorrhapha (Diptera) In Scotland.

This report can be downloaded from Iain's ResearchGate pages. It covered the period 1982-1997 and is a valuable baseline set for before the period of rapid warming in the early 1990s. Iain showed a graph of the 10-year average UK temperature from 1920-2022: a long-term stable value up to 1990 of 8°C rising sharply to 9.5°C by 2022 at a steady rate of 0.5°/decade. By revisiting these original sites Malloch Society members have found provisional evidence for altitudinal shifts of several montane species over the past 40 years.

Iain gave examples of montane specialists that are likely to be sensitive

to a warming climate. His recent studies of the empid *Wiedemannia simplex* (see his 2018 and 2021 papers in Dipterists Digest 25:179-184 and 28:103-104) show how unpredictable and challenging monitoring some montane specialists can be. This fly was originally found at a single site in the Cairngorms in July-August 1936 and 1937, then in August 1984, and by Iain in 2018 and again in 2020-2022 at just two high-altitude lochs (~730m and ~930m) but it was not found in 2023 despite thorough searches at one of these sites.



Iain searching for the dolichopodid $Hydrophorus\ pilipes$ at Callater in Aberdeenshire where Verrall had found it 150 years before

The rarely recorded dolichopodid *Hydrophorus pilipes* was originally found at Glen Callater, Aberdeenshire (photo), by Verrall in July 1873 at an altitude of ~500m. In June 1934 Collin found it at Pools of Dee (~800m) also in the Cairngorms. Now, at least in the Cairngorms, this species appears to be restricted to upland flushes and pools at altitudes above 900m in the Cairngorms. At most sites across Scotland the common and widespread *Hydrophorus albiceps* is sympatric with *H. pilipes* but has a much greater altitudinal range. Understanding the different phenologies, ecology and (micro-)habitat requirements of sympatric populations of these dolichopodids could reveal interesting insights into how environmental drivers affect them differentially.



The spectacular scathophagid *Okeniella caudata* (photo) added to the British List by Iain in 2015 (Dipterists Digest 22:1-3) is a highly restricted species with a distribution limited to $\sim 5~{\rm km^2}$ of rich upland fen with basic flushes between The Cairnwell and The Mounth at altitudes of 750-850m.

The research carried out by the Malloch Society has provided a unique database for montane Diptera in the UK and shows the value of focused longitudinal studies that target critical "indicator" assemblages to answer important questions relating to climate change. In UK terms these species, especially those in the Grampian group, are at the highest

risk of local or national extinction. As such we should continue to highlight the impacts of climate change on our biodiversity through the fate of these Diptera species.

by Mark Welch

Insect pathogens

Darren Obbard [Edinburgh Uni & DF]

Dr Darren Obbard [https://obbard.bio.ed.ac.uk/] – Pathogens of Diptera: what do flies die of?

In reviewing my notes made during this talk I had scribbled the throwaway line — 'They burnt through a lot of PhD students to conduct all of these experiments'. For the subject of this talk given by Obbard was on everyone's favourite lab animal Drosophila and the study of their viruses, mostly undertaken in a lab, and mostly by the aforementioned students. Obbard first introduced us to what pathogens are and why Drosophila. To the majority of Biologists this family are 3mm long orange species with (mostly) red eyes, but Obbard states that is just not the case (check out *D. grimshawi* to see how stunning they can be). It was nice to hear someone wax lyrical about the charismatic species that do exist outside of universities...

But darlings of the genomic world they are, with over 400 species with completed genome sequences – that's nearly 9% of the described species in this family. And its not just one species that frequents labs, there are roughly 250 species in culture. A lot therefore can be learnt from the different species as well as the interactions between them.

And this is what virologists are looking at. For example, 51 species were injected with pathogens and across multispecies experiments, they found that closer relatives are more similar in their susceptibility to a new virus. Sound familiar?

Viruses are the most abundant parasites on the planet, and they work by hijacking your cells. 'They are as different from each as we are from them' states Obbard – some are RNA whilst others DNA and there are thought to be 5 species per mammal. That doesn't seem a lot, but every human contains 300 trillion viruses, mostly inside their gut. And researchers have been looking at the Drosophila 'virosphere' since 1937 and local epidemics of viruses act in a very similar fashion to human viruses.

All fascinating but this was a Dipterists Forum audience not a bunch epidemiologists. So, let's ignore the pesky humans for a second and find out what are all of these viruses doing to the flies.

Obbard describes an experiment that mixed wild and lab (no virus) species and exposed them for three days. The females were separated and introduced to new males to get to know each other and do what flies do best – reproduce. These females were followed through their life, where upon death an autopsy was performed to see whether she had a virus. A simple experiment to look at the susceptibility and transmissibility of certain viruses. This was but one of the many experiments on different viruses where many of the wild viruses were isolated and injected into the lab species to further understanding of what they were doing to the flies.

One such virus Kallithea Nudivirus - the Nudivirus is a family of rodshaped DNA viruses that only infect Crustacea and insects - is quite common in the wild species, but what does it do to them? Well sadly for the males they bit the biscuit earlier than the non-infected males and the females. But within the infected females egg laying stops. The females seemed to be reabsorbing them and gaining nutrients from them. Obbard and fellow researchers therefore suspect this is a gut virus and the males starve but the females have eggs to eat. Grim but fascinating.

To date more than 150 viruses have been identified associated with Drosophilidae, some are common whilst others rare, some infect many species, and some flies can suffer from multiple infections. Again, this sounds awfully familiar. Viruses are bad for us, and they are bad for flies. Let's hope that Drosophila keeps helping us understand more about ourselves and of course, the more important flies!

by Erica McAlister

Sensory Pegs in Prionocera (Tipulidae) larvae.

Geoffrey Hancock

This talk demonstrated how a seemingly simple project could lead in all sorts of unexpected directions. Like many of us during COVID lockdown, Geoff Hancock's "Dipterising" was largely confined his garden. He observed a number of Tipulidae larvae living in an overgrown old cattle trough repurposed as a mini water garden and set about identifying the species. Initially he studied the dorsal lobes finding them to be typical of Prionocera turcica. His excellent photos of these amazing structures were much appreciated by some in the audience. Delving into old literature for other diagnostic characteristics led Geoff to make morphological studies of other larval structures such as the arrangement of chaetae. As a result of this he found that the larvae contained structures known as sensory pegs on each of their segments. Although such sensory pegs are common in higher Diptera, among the Tipuloidae the only other report of these structures is from larval specimens belonging to the genus Angarotipula. What their function is and why only a small subset of Tipuloid species apparently contains them is not known.

by Zoe Adams

Diptera in the Arkaig native pinewood

Ian Strachan (Malloch Society)

Ian Strachan presented results from a comprehensive invertebrate survey in the Arkaig Community Forest. This is located (NN18) on the south shore of the eponymous loch in West Inverness-shire (vice-county 97) just north of Fort William. There are two blocks of forest covering over 1000 hectares, acquired from the Forestry Commission in 2016 in partnership with the Woodland Trust. Both contain remnants of Caledonian pine forest, birch woods, blanket bogs, freshwater habitats and extensive areas of non-native conifers including Sitka spruce and lodge-pole pine.



Ian explained that man's impact on this ancient landscape has been significant. A fire, started in the glen by commando training operations during World War II, severely damaged large swathes of forest, leaving behind hundreds of charred pine skeletons that still dominate the landscape. The historic exploitation of timber, planting of non-native trees, and overgrazing by deer and sheep have all left Loch Arkaig pine forest degraded and the remaining fragments in decline.

Meetings

At the outset of a long-term restoration plan, the Woodland Trust commissioned Ian to carry out this survey as a base-line study. Throughout 2018 a Malaise trap was run in the middle of each block, and in 2021 a Malaise and other traps were run nearer the loch. The process of identification has been proceeding ever since with the help of several specialist dipterists. Ian's current total for all insects and a few other invertebrates is 813 species in 219 families. The lion's share of these are indeed the Diptera with 394 species and 60 families.



As with all entomological sampling, there was a vast disparity in numbers between the most and least abundant species. Seven families have yielded over 1000 specimens apiece: apart from the Mycetophilidae now that Peter Chandler's handbook has been published, these are families that most of us are reluctant to engage with — Sciaridae, Psychodidae, Ceratopogonidae, Chironomidae, Cecidomyiidae and Phoridae. Most of these still await identification to species. At the other end of the scale 12 families have yielded 3 or fewer specimens, including such familiar ones as Opomyzidae and Tephritidae.

Ian highlighted some of the notable Diptera species, of which 29 have a Red Data Book or Nationally Scarce status. Highlights of these highlights were a fungus gnat new to Britain, Boletina gusakovae, a very small Acalyptrate apparently new to science in the genus Oldenbergiella (Heleomyzidae) and the two recent additions to the British fauna in the metallic green tachinid genus Gymnochaeta, magna and lucida (see Dipterists Digest 30(2023)145-146 & 218-225). But the most amazing find was 48 male specimens of the stylopid Elenchus tenuicornis in one Malaise trap sample. These minute insects are members of the little-known order Strepsiptera. They are parasites on other insects (Delphacid bugs in this case); only the males are free-flying, and that for a few hours only.

Ian concluded that this project has demonstrated the effectiveness of Malaise trapping as a sampling method for Diptera and other orders but has also highlighted the general neglect of the most abundant families. How to use these baseline data to monitor effects of the long-term restoration remains an open question.

by Phil Brighton

The Pine Hoverfly captive breeding programme Helen Taylor [RZSS]

Breeding and reintroducing pine hoverflies to Cairngorms National Park.

Dr Helen Taylor, Conservation Programme Manager, Royal Zoological Society of Scotland (RZSS).

The pine hoverfly, *Blera fallax*, is Critically Endangered and now known only from a single site in Speyside – it used to occur more widely here, and in Deeside too. An attractive species with a red-tipped abdomen, it requires old-growth pine forest where the heart-rot fungus *Phaeolus schweinitzii* creates rot holes, the larval habitat. The larvae are of the 'rat-tailed' type, their long breathing tubes being highly telescopic, adapted to cope with fluctuating water levels.



Given the highly precarious status of the hoverfly, and the improbability that it would naturally colonise new sites, in 2015 the RZSS were asked to attempt captive breeding with a view to (re)introduction to suitable pinewoods in Speyside. 25 larvae were collected from the remaining site and reared in artificial rot holes in a shed, water-filled jars containing Scots pine woodchips and sawdust. Moss plugs provided suitable conditions for pupation. Larvae survived to produce adults: these were placed in flight cages with a plentiful choice of both flowers, for nectar and pollen, and of egg-laying sites.

By 2019 techniques for successfully taking the captive population through the entire life cycle had been perfected. In 2020 170 larvae were produced, the following year no less than



8,000! Photos Helen showed us of the rearing shed full of jars packed with larvae reveal an operation of prodigious proportions. Release into the wild was now a practical proposition.

Three release locations were selected, woods with the requisite old growth pine but also with rowan – captive adults showed a strong preference for the flowers of this tree. The three sites, Garten Woods, Bognacruie and Ryvoan (Glenmore), are all in stable long-term ownership. They lie between 7km and 10km apart. Between October 2021 and the following March 6,000 larvae were released across the three sites into man-made rotholes. These rot holes were of two types: stumps with holes excavated in their tops and troughs dug out of logs. The holes were filled with woodchips and covered, leaving sufficient gaps for them to collect rainwater. Between 25 and 50 larvae were placed in each.

That summer of 2022 an adult was seen at one release site, the first seen in the wild for eight years! Even better, in September larvae were found in the rot holes at all three sites (along with those of *Callicera rufa, Myathropa florea and Xylota* species). Much positive media attention followed, and local communities and volunteers engaged.

The following winter a further 6,000 larvae were released at the three sites. This autumn, 2023, 3,000 more have been released, some into a new, fourth site, but none into the Garten Wood, the most successful one of the three original sites, to see whether a self-sustaining population had been established there. For unknown reasons, stumps roles are preferentially used rather than troughs – an unfortunate result from a practical perspective since troughs are much easier to make.

The signs are very promising that captive breeding and release will result in new self-sustaining populations in the wild, greatly increasing the chance that the pine hoverfly will survive in the British Isles. If so not only will this be a huge achievement, but it will also be the first successful captive rearing and release for any invertebrate in Europe.

Meanwhile, work is underway by RZSS to investigate the genetic variation within the Scottish population and to compare this with populations in Scandinavia. Will it prove desirable to increase the diversity of the Scottish population by introducing individuals from Scandinavia? Is the Scottish population genetically distinct?

Many thanks to Helen for a fascinating, enthusiastic and energetic talk - despite jet lag, having returned from New Zealand just the day before!

by Rob Wolton

Recording Diptera in Highland

Murdo MacDonald [HBRG]

Recording Diptera in Highland

If Ian Strachan had shown how challenging it is to record a single 10-hectad site, Murdo McDonald has been tackling Diptera recording across the 25,657 hectads of the Highland Region. This is the area of a single local authority and comprises 9 vice-counties (95-97 and 104-109) extending from Inverness-shire to the northern and western extremities, including Skye and neighbouring islands. It is one-third the area of Scotland and bigger than Wales, and has extensive lowlands as well as the hills.

Murdo modestly disclaimed the title of "dipterist", describing himself as a general naturalist climbing the hills, kayaking amongst the inlets and drinking beer in the garden, but always on the outlook for all sorts of wildlife. This contributes to the database of the Highland Biological Recording Group (hbrg.org.uk), currently containing 350,000 records with biannual updates to the NBN Atlas. Records are regarded as a means to an end of turning data into information. Accounts have been published of fungi, butterflies, beetles, aculeates, and even some flies.

There is a very different dipterous fauna to be found in Highland, and HBRG, together with its sister recording groups in the Outer Hebrides (ohbr.org.uk) and in Argyll (abrec.org.uk), is now the main source of diptera data in the region, as Murdo illustrated. For instance, the Scottish speciality *Calliphora uralensis* (Calliphoridae) has 187 NBN records of which 140 are from HBRG and 40 from OHBR. Even for the cuddly orange-bearded blue-bottle (*C. vomitoria*) HBRG has contributed 244 of the 394 Scottish records.



As well as immense unexplored spaces, spring and autumn offer exciting opportunities for finding supposedly species, having been neglected by past generations of dipterists visiting from the South. Murdo gave examples of Atylotus fulvus (Tabanidae illustrated)

Lispocephala pallipalpis (Muscidae), Botria subalpina (Tachinidae) (added to the British list by Murdo in 2012), Prionocera pubescens and Tipula cava (Tipulidae), and Cordilura ustulata (Scathophagidae). Many of these records came from casual observations near Murdo's home.



Contact with people with different interests has paid dividends. A proportion good of records of the deer warble fly Hypoderma diana (Oestridae <u>illustrated</u>) has come deer-stalkers from seeing the larvae in the carcases Murdo that warned his illustration of

infected haunch might horrify any venison-eaters. A special study of *Protocalliphora azurea* (Calliphoridae), parasites in bird nests as larvae, was greatly assisted by local ornithologists

Murdo encouraged prospective visitors to look beyond the well-known areas of Strathspey and Deeside. Many of the best places are not designated sites. Go earlier or later in the year and expect the unexpected, such as *Stomorhina lunata* (Rhiniidae) recorded by the late Abbie Rhodes at two separate locations on the North coast two years apart.

And if you can't go there in person, at least be sure to visit the HBRG website!

by Phil Brighton

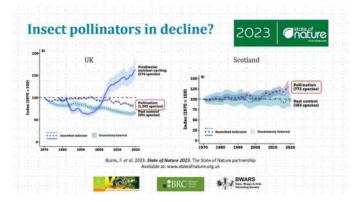
Meetings

Pollinator Monitoring Scheme

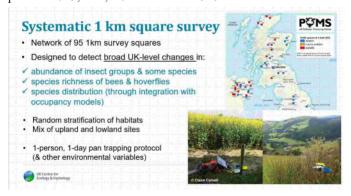
Martin Harvey/Claire Carvell [BRC/CEH]

The UK Pollinator Monitoring Scheme in Scotland

Miranda Bane, Martin Harvey, Claire Carvell & Robin Hutchinson Our last talk in Edinburgh was on the UK Pollinator monitoring scheme in Scotland. Sadly, Martin Harvey was unable to make the trip north, so the talk was delivered by Miranda Bane from CEH, with Robin Hutchinson in the audience. Miranda opened with some recent data on Pollinator numbers across the UK, showing two plots for data taken from the 2023 State of Nature report. The plot for the whole of the UK shows a slow decline in pollinators from the mid 90's on, however the plot for Scotland alone reveals a steady gentle increase in pollinator numbers from the early 2000's onwards.



For those not familiar with it, the UK Pollinator monitoring scheme (often referred to as PoMS) has two arms, the Flower-Insect timed counts (FIT counts), and the Systematic 1 km square survey. FIT counts were launched back in 2017 with citizen scientists in mind, they take 10 mins, and can be done by anyone, anywhere with the appropriate flowers in bloom between April and September. Instructions are available from the PoMS website, or the smartphone App. This data has enabled the CEH team to compare different habitat types, and Miranda presented a comparison for gardens and agricultural sites. In gardens approximate numbers are around 25% of flower visits from Bumblebees, 20% Honeybees, 15% for Hoverflies & other flies, and 10% from small insects. For agricultural land Bumblebee flower visits drop right down below 10%, replaced largely by the small insects category at around 25%, Honeybees also drop to a little over 10%, Hoverflies are constant at 15%, and other flies increase to around 20%. Encouragingly the number of FIT counts submitted has increased year on year since their launch, with a peak in 2023, of 4,129 counts from 618 recorders.



The Systematic 1 km square survey comprises 95 1km survey squares across the UK, selected through random stratification

of sites to give a mix of upland and lowland sites. Each square is adopted by a recorder who commits to carry out a standardised one-day pan trapping protocol throughout the sampling period. PoMS provide recorders with equipment, access permission and sample ID training, as well as an initial site visit with PoMS staff to ensure familiarity with the sites access points and trap locations. These pan-trap surveys provide data on abundance of insect groups & some species, species richness for bees & hoverflies, and information on species distribution via integration with occupancy models. Between 2017 and 2021 over 335,000 insects have been sampled and processed for the survey. At the top of the Hoverfly abundance league table for Scotland is the ever-present Episyrphus balteatus, followed by Syrphus ribesii, Helophilus pendulus, Eristalis pertinax, and Sericomyia silentis. Interesting records for Scotland include Dasysyrphus neovenustus (recent addition to species lists, known from Scottish pinewoods, PoMS records in 2021 and 2022), Anasimyia contracta (a declining species, scarce in Scotland, PoMS in 2019), Eristalis rupium (northern species declining in England and Wales, PoMS in 2019 and 2022), and a PoMS 2022 record of Xylota tarda (Nationally Scarce), widespread in the UK but rarely encountered, associated with sap runs on Aspen tree trunks.



Miranda concluded with an enticing advert for the UK's most Northerly PoMS square which is currently up for adoption. The square is close to the village of Talmine in Sutherland and comes complete with seawards views out over the Kyle of Tongue with its golden sands and numerous islands. Interested volunteers should contact poms@ceh.ac.uk

Further reading:

The UK PoMS Annual report 2022. UK Centre for Ecology & Hydrology and Joint Nature Conservation Committee. Available at: ukpoms.org.uk/reports

Burns, F. et al. 2023. State of Nature 2023. The State of Nature partnership. Available at: www.stateofnature.org.uk

Pocock, M. J. O., Hamlin, I., Christelow, J., Passmore, H.-A., & Richardson, M. (2023). The benefits of citizen science and nature-noticing activities for well-being, nature connectedness and pro-nature conservation behaviours. People and Nature, 5, 591–606. https://doi.org/10.1002/pan3.10432

Many thanks to the Wiltshire Wildlife Trust, Anthony Bainbridge, Rob Walton, George, as well as Jane Hewitt and Marc Taylor (who weren't able to attend) for the organisation of the sites, permits and much more, and to all the many individuals that helped make the weekend a huge success – I will sign off with the wonderful words of Una Garland as I think that they were most apt 'Had a wonderful time with wonderful people in wonderful weather'

Erica MacAlister

Bulletin Editor's Note: The next 2024 Annual Meeting account will be compiled and collated by a different team. Expect to find it treated just like our Newsletters. The above should be a fair guide for how to present it.

Forthcoming

Spring Field Meeting 2024

Radnorshire - mid Wales

Saturday 18th May to Sunday 19th May

The base for our 2024 Spring Field Meeting will be Llandrindod Wells in the Vice County of Radnorshire. This field meeting is being organised in liaison with the "Natur Am Byth! Saving Wales' threatened species" National Lottery supported project. One of the flies we will hope to find for Natur Am Byth! is the cranefly *Ctenophora flaveolata* (Wasp-banded Comb-horn Cranefly), for which records from several sites in the target area are known. This is a relatively under recorded part of the UK, so there should be plenty of scope for discoveries of new species for the area. The meeting leader will be Nigel Jones.

The usual arrangement for the spring field meeting will apply, where attendees book their own accommodation. If you are interested in attending, please contact the DF secretary (jane. e.hewitt@gmail.com) and she will keep you informed of plans, meet-up points etc.

Jane Hewitt

BENHS Field Meeting

West Sussex
Knepp Estate
1st June to 2nd June 2024

Ray Barnett

President British Entomological & Natural History Society (Tree's new book might be out by then Ed)

Summer Field Meeting 2024

Lancashire
Lancaster University
22nd June to 29th June 2024



The 2024 summer field meeting will be based at Lancaster University, June 22nd-29th. Lancaster is a good base for exploring north Lancashire, the southern Lake District and the Forest of Bowland. We have reserved 30 en-suite rooms, which are a mixture of single and twin. For single rooms, the cost of half-board (which includes a two course evening meal with tea or coffee) will be £460.81 for 7 nights, while B&B only will cost £355.81. For two people sharing a twin room, the cost per person will be £309.16 for half board and £204.16 for B&B. Booking information may be found in Bulletin 96 p38 and on our website. There were some rooms remaining at the end of December (copy deadline for this Bulletin), but please check with the Treasurer that this is still the case before transferring your deposit

Any DF members who are local to the area and would like to

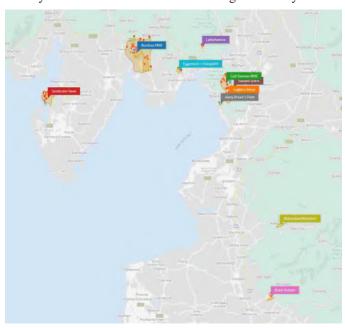
attend field days will be very welcome to join us and should contact the Secretary

DF Secretary, Jane Hewitt (jane.e.hewitt@gmail.com)

A famous stamping ground for us Lancastrians and visited by Dipterists Forum in 2013 (Lancaster) and 1999 (Grange-o-Sands). Steve Garland is part of the team currently working on organising site permits. In the meantime if you want an idea of some nice spots, I've set up an iNaturalist site project for the area at

https://www.inaturalist.org/projects/north-west-england

where you'll find a handy map detailing ten good sites. Based on photographs of course (see p10) but if you want species lists we've uploaded huge numbers as Open Data on NBN Atlas, notably the historic Manchester Entomological Society dataset.



Steve of course wrote the excellent iRecord guide and I'll be hoping to add more snaps to iNaturalist. Interrogate us both if you want tips regarding either platform. Target species too as we both know the area well (is *Doros* still around?, which *Microdon* is on Latterbarrow, is it worth a long trip to Sandscale Haws for *Pamponeurus germanicus*? Can I find *Cnodacophora sellata* at Abbeystead again?[no nets please])

Darwyn Sumner

12th International Symposium on Syrphids

Czech Republic

in Pruhonice castle near Prague 2nd to 7th September 2024



https://web.natur.cuni.cz/zoologie/syrphidae/

AES Annual Exhibition and Trade Fair 2024

Kempton Park Racecourse, Sunbury-on-Thames, TW16 5AQ 28 September 2024

