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Now organised by several different contributors, contact the Secretary.

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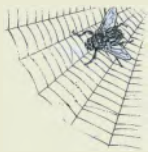

Photographs: Front cover *Ceratitis capitata*, **Sean Browne**, above *Geomyza tripunctata*, **Malcolm Storey**

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)

BULLETIN OF THE
Dipterists Forum

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Fly Sheets

Fly Ties

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Bulletin 95 links https://tinyurl.com/3k5axjr4
includes an interactive pdf Recording Scheme brochure; the back pages of this Bulletin

Recording Schemes iNaturalistUK https://tinyurl.com/yrd28des
iNaturalistUK projects to many Diptera Recording Schemes

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

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

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

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

Desktop Publishing, Darwyn Sumner; Editorial, Darwyn Sumner & Judy Webb; Printing & distribution, Jane Hewitt; Mail costs, Biological Records Centre

Editorial

Recording Aims

I'd occasion to look into the history of our club recently. Check the old Bulletins and you'll see it all began back in 1976 when Alan Stubbs gathered a few friends and colleagues together to help organise activities (including meetings and workshops) surrounding the Cranefly Recording Scheme formed in 1972 and discussions began on similar ones for Soldierflies and Hoverflies. The "Central Panel", precursor to Dipterists Forum, began back then, offerred assistance and stated that … *future must allow the new schemes to work out their organisation* … As new Recording Schemes emerged over the years, that simple philosophy was followed and the Bulletin was used to report on progress with those initiatives. Alan Stubbs performing that task until 1991, Martin Drake until 1998 then I've done the last 49.

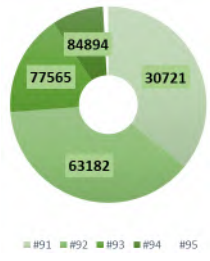
This "*can we help*" approach continued throughout the years to the point where Rob Wolton says of the 30 or so Recording Schemes "There are so many now!" Significant events over the years include the BRC joining in with their "*can we help*" and do so to this day (they support our website and paid the postage for this Bulletin for example). Bear in mind that in the early years they had the only means of Recording, personal computers and online systems were a long way off. Bulletin editors kept BRC up to date with new Recording Schemes and the best source for our RS contact information for a long time was their website (not to be forgotten - same as Lincoln Cathedral being the tallest building in the world.) So I got to know bosses Paul Harding then Mark Hill during the electronic revolution. During which period all naturalists in the UK chipped in to develop the NBN through which Open Data services are now delivered, desktop systems such as Recorder and Mapmate thrived and BRC later developed iRecord.

Dipterists Forum's role remains unchanged in 50 years - **tell us how we can help**. No need to audition like the Beatles had to do to get played on the BBC in 1962 (Rolling Stones failed their audition.)

Open Data - update figures

Dipterists Forum's Open Data are publicly accessible species occurrence records to be found on NBN Atlas. Our data partner page is on their site at https://registry.nbnatlas.org/public/show/dp172

There was less activity there in 2022 and the increase was small - to 85649 (white segment.)



Dipterists Forum Open Data records increase on the DF NBN Atlas since 2020, 6 month intervals

There are a number of datasets queueing up for the Atlas at the moment. A couple of our more recent Epoch 4 field week datasets and a handful of small Recording Schemes and projects; we hope to transfer them soon.

Bulletin 91 (p11) detailed all the Recording Schemes whose datasets dwell outside the Dipterists Forum partner page and so have to be monitored separately.

These include Calliphoridae, Rhinophoridae, Tachinidae, Anthomyiidae & Craneflies (up from 18,601 to 31,988 now.) They can easily be reassigned to the DF partner page if those schemes wish.

Biodiversity targets

The targets were promises to protect 30% of UK land by 2030 and are commitments by UK government back in 2020 (https://tinyurl.com/4xz826bt)

Bluebottle: *Did you know a uniform attracts women like flies*
Eccles: *Oh I wondered why all your women look like flies* Goon Show

They're a follow-up to the Aichi targets which failed a few years ago (by most countries) Internationally we should monitor the **Cop15** summit in December, organised by China (hence the term "Kunming") but hosted in Montreal, Canada. Their success will be very dependent upon outcomes from the Cop27 climate talks. David Cooper of the convention on biological diversity (CBD) summarised it as follows: "*If we don't have successful outcomes in the climate process, then we cannot hold and reverse biodiversity loss … we depend on the success of the climate conference, but they also depend on the success of the biodiversity conference,*" It's numerically confusing that COP27 comes first and is followed by **COP15** but it's the latter that focusses on our flora, fauna, habitat destruction etc.. The Guardian summarised the **COP15** status at https://tinyurl.com/2p8652yz

In the UK it's worth repeating New Scientist's Graham Lawton: "**extensive ecological restoration will have to be carried out in nations such as the UK that have little intact biodiversity left**."

In order to protect biodiversity and all the benefits it provides to us it was proposed by E.O.Wilson that about 50% of the planet should be set aside for nature. Some studies cite a higher figure but none go lower than 30% - we in the **UK are in the bottom 10% of nations and the worst in the G7 countries**.

UK decline

The UK government appear opposed to the above aspirations and attempts by organisations to address the declines. They consider all naturalists and all the leading nature charities and agencies (Wildlife Trusts, RSPB, Angling Trust, National Trust, and the farming community.) to be an "anti-growth coalition, estimated at 10 million people.

The story of fast-track development plans intended to trash the UK environment by over-riding all the hard-won pieces of protective legislation and policies came to light in early October, first from ***New Scientist*** leading to a front-page exposure in the ***Observer*** (9th October.) Anger by the press continued in ***New Scientist*** by reporters Michael Le Page (29 Oct, 5 Nov) and Graham Lawton (5 Nov) who quoted several eminent scientists pouring scorn on UK government plans, including **Natural England**'s Tony Jupiter: "*Too many people seem blind to the fact that our economy is a wholly-owned subsidiary of nature, with our entire way of life sustained by ecosystems as diverse as soils and the sea. Nature is the basis of our food supply, clean water, air and vital for human health and well-being, Degrading those key services means money has to be spent dealing with the fallout, money that could be better spent elsewhere.*" Lawton ends with "*There is an anti-growth coalition in the UK. It is led by the dinosaurs who think that conserving the environment and economic progress are mutually incompatible.*"

Finally ***British Wildlife*** (November) correlated the various UK government aspirations with legislative plans in a piece by Richard Benwell detailing each major current piece of legacy EU legislation (which the UK devised) and indicating the consequences of ditching each one should the plans to do so by the end of 2023 come about. Make the most of 2023, by the end of it more of the natural environment will be gone but the filth will remain.

2030? - Tell it to the trees

By mid December it was clear that COP27 had been a flop and that **COP15** aims were unrealistic (New Scientist 10th Dec. & 7th Jan.) Tell it to the trees, it'll take them at least 80 years to respond to anything, as anyone watching our ash trees disappear or witnessing widespread drought deaths will realise.

UK has led the world in destroying the natural environment (Davies, 2020)

A return to 1894 with the loss of Water Regulations 2017, Air Quality Regulations 2010, Conservation of Habitats & Species 2017 etc.

Further indolence reading:

Donkersley, P., Ashton, L., Lamarre, G. P. A., & Segar, S. (2022). Global insect decline is the result of wilful political failure : A battle plan for entomology. Ecology & Evolution, (October). https://doi.org/10.1002/ece3.9417

Overseas tales

Take an interest in a particular area of dipterology for long enough and you get to meet a number of other enthusiasts from abroad. Phil Withers friend and colleague from France, Jocelyn Claude for example who happens to be keen on Psilidae, same as me. Do a bit of reading around and exploring your subject and some of them become like rock stars: "are you the author of that paper?" I asked on iNaturalist - and so I met Estonian author and explorer Veljo Runnel; I'd spent a lot of time on Google Earth looking up his Micropezidae sites so I felt like I'd explored their fantastic countryside with him. Bung something on ResearchGate and you are likely to contact some of the readers of that item - especially if you cite their paper, so now I know Jindřich Roháček and Libor Dvořák of the Czech Republic and had a long chat on their forum with Ruud van der Weele (Netherlands) who has other contacts in South Korea and Japan which I've followed up. I've chatted too to several dipterists from Spain (Simon Oliver) and Portugal (Rui Andrade) through work on my recording scheme on iNaturalist. Germany's Jens-Hermann Stuke also kindly gave me the image of *Micropeza nigra* to use in my key. In Finland both teacher Kaj Winqvist and Jere Kahanpää are interested in taxa in my Recording Scheme. Both Jere and Jocelyn are also avid supporters of iNaturalist where I met Ryszard Orzechowski of Poland with his nice project at https://tinyurl.com/2zk4vkwt

The Netherlands host a range of dipterists, I subscribe to their general wildlife online newsletter **Waarneming.nl**, all in Dutch of course but entomologists feature strongly and there's the occasional fly article. Netherlands are home too to **Diptera.info**, a forum where you can meet up with many dipterists across Europe (and the world) here's where you'll find Nikita Vikhrev who wrote that cracking little book - *Diptera: An introduction to Flies*. Operated by Paul Beuk, he once attended one of our Field Meetings here in the UK.

The **North American Dipterists Society** at https://dipterists.org/index.html is worth visiting to make contacts there, their society and newsletter have similar aims to our own. South America also seems to have numerous dipterists judging by my ResearchGate "read lists" as does China - what wondrous flies might one find there? A recent discovery by me is that there is a publishing society "**The Dipterist's Club of Japan**", we'd love to know more about them.

Dipterists Forum has a substantial number of overseas members, only John Showers could tell you who they all are but I guess several of those mentioned above will read this. Thanks to them all for encouragement, help and conversations and do think about joining us on future Field Weeks, it would be great to meet you in person.

These are just my personal recollections of making contact with overseas dipterists. Other UK specialists would tell you entirely different stories. Our own rock star of course is Peter Chandler - he knows everyone it seems.

Good news for anyone overseas is that DF subscriptions will be lowered to £8 (same as us in the UK) in 2024 if they opt out of print versions of this Bulletin and just go for a pdf download on the members area of our website. And of course we'd welcome informal stories from you, perhaps some Thai tales from Adrian Plant again or accounts of expeditions & conferences.

Feedback

Editing a journal that comes out only once very 6 months is a bit like being a stand-up comedian in a nearly empty theatre. Immediate responses are scarce (thanks Mike Bloxham for the applause - most encouraging) and there's no way at all to gauge the response to cartoons and other funnies - just me at the time I do them. Actual meetings perhaps, but they've declined a bit until recently and the jokes are cold by the time I get to one.

Flickr

The Dipterists Forum Flickr group continues to grow (https://tinyurl.com/y65ryktt and has been receiving some rather nice images. In fact one of them was chosen as our front cover illustration. So far only fly pictures posted, but it's available for some choice snaps from our field meetings too. Show your appreciation by "fave"ing the ones you like.

iNaturalistUK

As a site which provides extensive statistics it's relatively simple to gauge responses to the Dipterists Forum initiatives announced in the last Bulletin. Membership on the Dipterists Forum site there (which provides links to the majority of our Recording Schemes) grew to 20 this year.

Twitter quitters

It cannot have escaped anyone's notice that recent events have caused users to leave this social site in droves (Naughton, Observer, 18/12/22.) or that they are now at risk of non-compliance with EU & UK legislation (Dan Milmo, ditto.)

I guess it's important to Dipterists Forum because a third of the column space on the home page of our website is devoted to it. A blank column to me, maybe because I'm not registered, but evidently considered useful to some. I raise this topic because every time I suggest that that blank column could be used as a pretty display for Martin Harvey's super advert pictures for the Bulletin I get things thrown at me (duck!)

New Scientist raised this withdrawal topic twice in their 10th Dec issue, a factual statistical account by Chris Stokel-Walter (p21) and a review of alternatives by Annalee Newitz (p24) who suggests **Mastodon** for various reasons including DPR compliance, the absence of venom and corporate control/surveillance and the ability to select and govern communication rules in specialist areas of science.

Perhaps our DF social media folk will latch on to Mastodon and our website home page will change - watch that space.

Darwyn Sumner

Hypotheses: *There is something fascinating about science. One gets such wholesale returns of conjecture out of such a trifling investment of fact*. Mark Twain

iNaturalistUK

The many UK users of iNaturalist will be aware of how extensively they use statistics on their site. A gift to anyone who likes playing with Excel charts but I'll restrain myself and just pick a couple. Across all wildlife in the UK there are now 932k observations and 1.2M identifiers, so that's more naturalist knowledge than people enquiring. Just what you'd expect from the UK's two centuries of Natural History pursuits.

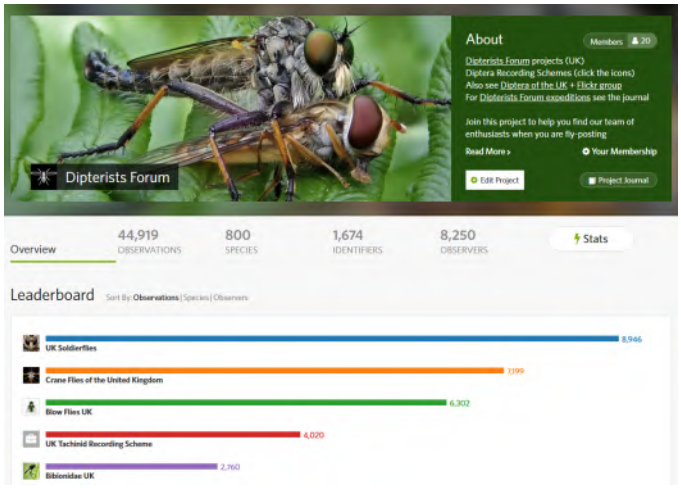
That's a lot of pictures but nowhere near the estimates by Amateur Photographer of the 9 billion images languishing on cameras and mobile phones. Time to dig through collections and put them to good use.

As a comparison to those figures the Diptera are 122k observations and only 2,673 identifiers. That's a lot of interest in flies, 13% of all wildlife in the UK. As for those identifiers, gosh where are they all coming from, that's 5 times more than our Dipterists Forum membership. A lot will be the folk who posted the question agreeing with an expert but that's still a lot of potential to swell our ranks. A heck of a lot of this expertise comes from overseas - we've good news for them if they want to join DF (see above)

Computer hygiene: Anti-spam measures will be familiar to anyone who tries to deal with unwanted emails. An obvious tactic is to unsubscribe whereupon the spam stops. Many users fell foul of this with iNaturalist because they use the same email address for their spam as they do for important messages. Which included a recent login request to confirm your email address: their message didn't arrive because you blocked it. Thanks to NBN's Giselle (iNaturalistUK's lead) and Steve McWilliam who figured this all out, iNaturalist now have a clear message about how to fix your login problems if you too fell foul.

Verification: The one-person schemes who use iNaturalist would value a "buddy" to help them raise records to ResearchGrade, thus allowing records to pass to iRecord for full verification. We've a nicely laid out project page on iNaturalistUK where you can choose a favourite Recording Scheme (try Oestridae) and easily make a real difference to their efforts:

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



Scroll down to see the 23 Recording Schemes added so far. Each one links to its own project (and other details)

This project featured in NBN publicity at

https://uk.inaturalist.org/projects

Life histories

There's such a lot we don't know about the particular life-histories of the majority of Diptera. Easy to imagine we're doing well when one considers well-known examples such as medically or horticulturally important groups. We can also applaud the efforts and successes in researching certain groups such that we've now got terrific success rates in Soldierflies and Hoverflies, to a great extent in Craneflies and some that are clearly habitat-based like the Oestridae and allies, Fungus Gnats, Scathophagids, Leaf-miners and Kelp-flies.

Graham Rotheray however told us in 2016 that <2% of fly species worldwide are known from their immatures. The message is not a new one then, deserving of a regular summary in the Bulletin.

Can of worms

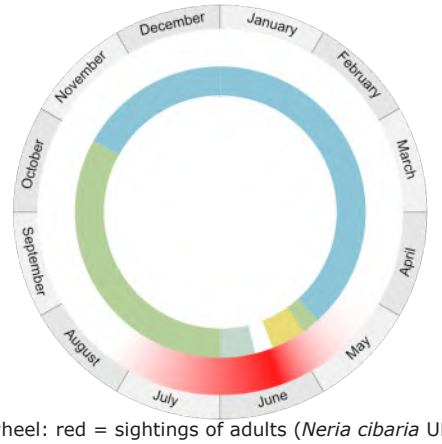
A version of this summary was circulated amongst known Dipterists Forum experts of diptera early stages and again amongst all the Recording Schemes. The response was very enthusiastic but one or two did warn that it was a huge subject. I took the comment "you'll just skim the surface" as a tip about *Stratiomys* larvae.

Focussing in on habitats has been an approach widely used to research this topic, dead wood being a prime example (though we're far from elucidating them all yet)

One material currently of interest is the plant debris which accumulates in and around wetlands (piles snagged against trees, heaps of grass cuttings or simply decaying mats of nettles.) Hang around a diptera rich riparian area and a lot of the flies around you will be exploiting that habitat in various ways.

Diptera life-cycle

A typical diptera phenology wheel (riparian wetland species)



Outer wheel: red = sightings of adults (*Neria cibaria* UK)
Inner wheel immature stages: Blue = diapausing instar 3 larvae, green active instar 3 larvae, yellow = puparia. White = ova, pale green are the instar 1 & 2 larvae. Estimated from Barnes, 2016.
Hand drawn vector diagram: sadly not feasible as a spreadsheet chart [D.Sumner]

Several strategies are evident from the diagram. Adults mate and oviposit as soon as they can find one another, dispersing and laying for as long as they can survive. Larva pass through the first two of three instars within a couple of weeks then spend the rest of the warm summer and autumn feeding. When it gets cold they enter mandatory diapause (they die if they don't), emerging from that when conditions warm up whereupon they seek a dry site to pupariate (no more feeding) to emerge as adults a couple of weeks later.

The above outline will work for many species but by no means all. Exceptions abound, for example a species which diapauses in the egg or puparia stage (Denlinger) or has two adult

emergences (bivoltine), phytophagous species which depend upon a live healthy leaf, developing flower head or those requiring animal hosts or prey. Each has a different strategy; the above outline is only possible due to an exceptional in-depth study of one species (breeding through from egg to adult)

There's an excellent account of life-history strategies in

Verberk, W. C. E. P., Siepel, H., & Esselink, H. (2008). Life-history strategies in freshwater macroinvertebrates. Freshwater Biology, (53), 1722–1738. https://tinyurl.com/2p86skd2

Though the focus in the paper is across a wide range of invertebrates, this works nicely for diptera and other habitats. Use a trick of skim-reading if it seems too technical, start half way through on the strategy section then read the intro. It may improve your field observation skills when you next encounter something - why are they there at this particular time - what do they feed on, as adults and larvae and where are those larvae?

Martin Drake gives an example of another with a different strategy, *Hilara* adults are always found at water but their larvae are mostly not aquatic. He cautions *"the assumption* [is] *that 'life history' refers to* [a] *larval development site but a sharper definition is needed. After all, what the adults do is also part of their life history ... we assume too often that the larvae live where the adults are found, so rearing gives a better guide to where they spend 95% of their lives."*.

Book worms

Reading lists

Fieldcraft

Rotheray, G. E. (2016). Fieldcraft and closing the knowledge gap between immature and adult stages of Diptera Cyclorrhapha. Dipterists Digest Second Series, 23, 85–96.

… and a previous one on Hoverflies by Graham in DD 9

Look out for other authors such as Brindle, Dobson & Skidmore

Rearing

Alan Stubbs: *You need to find people with high success rate (perhaps a very rare dipterist?). British Soldierflies and Allies p. 303-4, bravely offers a section on rearing that may have wider application (at least I have had some successes). British Craneflies p.58 affords only few lines; regrettably I had to axe a long section to give page space for more gen illustrations than originally bargained for. There is a hoverfly larvae study group that rears. The Agromyzid RC seems to have success with leaf-mines*

Diptera.info has a section devoted to rearing, the posts average two per year so I guess the appeal isn't great.

Habitats & life-stages

Alexander, K. N. A. (2002). The invertebrates of living and decaying timber in Britain & Ireland. English Nature Research Reports, 467(467), 1–142. http://publications.naturalengland.org.uk/publication/132027

Any "Scarce & threatened" review, Steve Falk's notes are very useful, particularly in noting what we don't know about scarce species.

Chandler, P. (Ed. . (2010). A Dipterist's Handbook (2nd Edition). Amateur Entomologist. Purchaseable - advert on our website

Smith, K. G. V. (1989). An introduction to the immature stages of British flies: Diptera larvae, with notes on eggs, puparia and pupae. In Handbooks for the Identification of British Insects (Vol. 10, p. 280).

Denlinger, L. (2022). Diapause among the flesh flies (Diptera: Sarcophagidae). European Journal of Entomology, 119, 170–182. https://doi.org/10.14411/eje.2022.019

Barnes, J. (2016). Biology and Immature Stages of Compsobata univitta (Walker, 1849) (Diptera: Micropezidae: Calobatinae). (October 2015). https://doi.org/10.4289/0013-8797.117.4.421

Research lists

Pretty much every group and every habitat would benefit from study, see what crops up in DD, Bulletin, keys (Sciomyzidae) or newsletters from the Recording Schemes (Craneflies in their latest from John Kramer)

Muck & worms

Hunting in the Spring

Just before everything begins to take flight from Spring onwards, conditions have warmed up a little; all those diapausing eggs have hatched and the larvae are on the move. Collecting material now reduces the chances of your experimental rearing setup destroying stuff (as Alan succintly observes - you'd be in good company.) The disadvantage is that numbers will be lower due to winter losses but the advantage over richer material collected in the Spring (eggs perhaps) is that you don't need to care for them for a whole year.

Put together a pre-season kit bag

- Plastic sweetie jar or two - cheaply obtainable on the internet, use any leftovers to store pantry goods
- Strong resealable plastic bags
- Leakproof container for those bags if wet and the jars won't do.
- Trowel | bryologist's potato peeler | knife
- Indelible marker (e.g. Sharpie)
- Means of accurately determining geoposition such as a GPS device, enough to ensure you can refind the exact spot later in the season.
- Camera + close-focus binoculars

Garden set-up

Back home with your samples you'll now be trying to emulate the conditions in which you found them plus arranging everything so that you can catch anything that emerges. The jars need to have their lids swapped for netting and sheltered from rain and unfavourable light/heat regimes. At the same time you've to think like an algologist and microbiologist because that's likely what a lot of them are feeding upon as the detritus breaks down. Wetland stuff will need a gentle flow of natural rainwater so my jars are on their sides in a shallow tray under a cover which allows a bit of rain through. A large pebble gives a drier spot to puparite and stops the jars from rolling about. Judy & Peter's setups will be entirely different as they're looking for fungus gnats in the autumn. Plant galls might be the least mucky and most rewarding:

Barry Warrington's current crop, for details of his Agromyzidae methods see page 11.

More equipment then:

- Some little specimen pots as above
- Perhaps a rearing cage to help you safely capture flies emerging from more elaborate or messy pots (see previous Bulletins)
- Preservative and tubes for anything you care to keep

Projects that any of our members can play around with, who knows what you might learn. Read the items by Verberk and Rotheray (DD on our website) then look for other tips in various books you have or resources on the Recording Scheme websites. Share any emerging flies with the Recording Schemes and pictures of your setup, including failures, with the Bulletin editors.

We hope to see your efforts in the next Bulletin.

Darwyn Sumner with help from Alan Stubbs, Judy Webb, Martin Drake, John Kramer, Barry Warrington, Mark Welch

Lancashire and Cheshire Update 2022

Still digging in the data mines

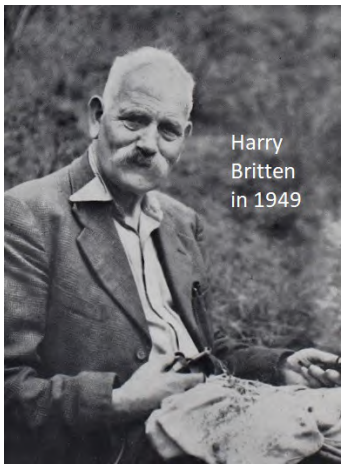
It is now nine years since my name first appeared in this Bulletin (#77) under a report on the large number of Diptera records in the Cheshire local records centre. It is the need for verification that has held back publication of this data on the NBN Atlas to the present day. I have chipped away at this by writing reviews of several groups of the Lancashire and Cheshire Diptera fauna: successively soldierflies and allies, Sepsidae, craneflies, Empididae (*sensu* Collin), Muscidae and Fanniidae, and most recently picture-wing flies (*sensu* Clements). These reviews are all available on the Tanyptera project website

https://www.northwestinvertebrates.org.uk/

Delving into these records has led to the discovery of the long history of recording in Lancashire and Cheshire, going back to 1880 and the first Diptera lists published by Benjamin Cooke. In 1914, the Lancashire and Cheshire Fauna Committee (LCFC) was set up to record all the vertebrate and invertebrate species of the region. Under the leadership of the Manchester Museum, this brought together local museums and individuals. There was a panel of 23 national or county recorders to deal with material sent in by collectors. Pamphlets were issued with instructions for collection and preservation.

Annual reports were produced providing an overview of activities, including an annual general meeting, the make-up of the panel of recorders (or referees as they were later called), lists of species new to one or both counties, and more extended articles on specific topics. These reports are all now available for download from the Tanyptera website and make fascinating reading for the general aspects as well as one's particular taxonomic interest. In 1920 there were 209 private members, but a "deplorable lack of active workers and collectors".

In 1930, the LCFC published *A Checklist of the Fauna of Lancashire and Cheshire (Part 1)* covering all the vertebrates and 13 invertebrate groups though not Lepidoptera or Diptera. Annual reports continued throughout the 1930s. By 1931 a membership had slid to 156 and a general decline in scientific societies was noted, but then there was a sustained upsurge reaching a peak of 280 in 1938.


Harry Britten in 1949

Regarding Diptera, preliminary lists were produced in 1917 and 1920 by Herbert Bury, a solicitor living in High Lane just south of Manchester. In 1919, Harry Britten senior, already approaching his 50th year, joined the Manchester Museum staff and became a major contributor to the work of the LCFC for the next 30 years. In the 1930 checklist he is listed as author for Tenthedrinidae, Coleoptera, Heteroptera, Homoptera and Siphonoptera, and co-author for Crustacea. He maintained a card index of records of species which was the main source of data for the Diptera checklist (Part 1) by Leonard Kidd and Alan Brindle that was eventually published by the LCFC in 1959. It has also been an important source for my two most recent reviews as Acalyptrates and Calyptrates remained to be covered in Part II of the Kidd and Brindle's checklist which never appeared. The Tanyptera Project has had the full set of cards across all invertebrates scanned and has enlisted the help of RECORD, the Cheshire LRC, to organise transcription of the remaining data by volunteers.

As an interim measure, last winter I worked through the published LCFC reports up to 1954 to compile a consolidated checklist covering all Diptera. This lists 839 Nematocera species, 443 lower Brachycera, 318 Acalyptrates and 301 Calyptrates. These numbers are good proportions of those in the 1945 British checklist, respectively 39%, 34%, 34% and 35% - a very even-handed coverage. As proportions of the 2020 checklist the numbers are 29%, 27%, 20% and 28%.

I've combined these lists with lists from the local records centres, IRECORD and the NBN Atlas to produce complete lists for all 3 of the vice-counties 58, 59 and 60 in our region. These are just bare lists of names against families on a spreadsheet which is also now available on the Tanyptera website. This does not amount to a completion of Kidd and Brindle's project as there is much checking to do, and extra information to add on numbers of hectads, earliest and latest years etc.

So it is very much a rough first draft, but useful for checking the status of new records as they come in, as you will see in the second part of this article. At the end of 2022, the numbers of species listed are 32% of the British total for Nematocera, 50% for lower Brachycera, 51% for Acalyptrates and 60% for Calyptrates.

Another current initiative of the Tanyptera project is to make further progress on verification of all terrestrial invertebrate records held by the four local records centres (Cheshire, Merseyside, Greater Manchester and Lancashire) so that they can be published on the NBN Atlas. Gary Hedges has collated the Diptera records for me to process on a spreadsheet running to over 43,000 entries. This number excludes Syrphidae and Dolichopodidae which are being handled by Glenn Rostron. We don't want to burden recording scheme organisers with masses of records of common species, so are reviewing the data ourselves.

Highlights of 2022

As well as mining the archives and bringing the rich history of recording in the North-West back into view on the website, the Tanyptera project team of Gary Hedges and Leanna Dixon organise an annual programme of recording days in various habitats throughout the region. Many records of Diptera new to one or all of the vice-counties have resulted, particularly in VC60, known officially as West Lancashire, but better thought of as North Lancashire. It's that part of the county north of the River Ribble which passes through Preston. It was poorly covered in the Harry Britten era, being remote from Manchester, but was visited by the Dipterists Forum in the field weeks of 1999 and 2013. On 12 June, we visited the woods and flower meadows of the Challan Hall Allotment RSPB reserve (SD4778), where I added *Molophilus lackschewitzianus* and *Leucophenga maculata* to the VC60 list. The first is a typical yellowish member of this Limoniid genus but nationally rare, though known from neighbouring Westmoreland. The second is a very distinctive fungus-loving Drosophilid, with its silvery thorax and black and yellow abdomen, a first for the region.

On 17 July we penetrated a remote part of VC60 on the northern fringes of the Forest of Bowland to reach Far Greenbank Farm, a shooting estate where herb-rich grasslands have been established. It was good to catch up with Steve Garland, Rob Zloch

and Nicola Garnham there. They have all made notable contributions to the VC60 Diptera list and have much wider interests as key members of the North Lancashire Wildlife Group (http://nlwg.org.uk/). The day has so far yielded 9 Diptera species new to VC60. We've started nibbling into the more difficult families: for instance I had *Bradysia bicolor* (Sciaridae), distinguished by its large size and red abdomen, while Rob had *Anapausis soluta* (Scatopsidae).

In South Lancashire, the well-wooded valley of the River Yarrow looping around to the south of Chorley was generally pretty dry on the 17th August but I managed to add another small yellowish limoniid (*Molophilus corniger*), to the VC59 list, while Rob Zloch had *Conicera dauci*, a widespread Phorid species from this poorly recorded family. The latter was actually recorded in Manchester by Harry Britten according to the 1959 list, though that is yet to emerge from the data mine.

One feature of the last few years has been a joint recording day with Invertebrate Group of the Sorby Natural History Society (http://www.sorby.org.uk/). You may not be aware of the historic Cheshire panhandle which extends along the Longdendale valley towards the Woodhead pass well on the way to Sorby's centre in Sheffield. In the steep side valley of the Heyden Brook on 7th September, Gary and I joined Jane Hewitt, Jim Flanagan (Heteroptera Recording Scheme) and Ken Gartside, author of *Hoverflies of Saddleworth* (of which a second edition is in preparation). The only species new to VC58 was the Muscid *Helina fratercula* but I was even more pleased to find *Opomyza lineatopunctata* (Opomyzidae) with its pretty spotted wings. This species is provisionally nationally scarce, but the the paucity of records is probably due to the secretive habits of the adults at the base of the *Molinia* (moor-grass) tussocks where it is found. I did find it a year or two ago when we visited the nearby Crowden valley, but the only previous Cheshire record currently known is from the Delamere forest in 1957.

Also in Cheshire was our only visit to the coast in 2022 at Leasowe Gunsite at the end of the Wirral peninsula. A small area of dune is separated from the sandy beach by a sloping concrete revetment. In the thin covering of bright green seaweed, my wife Elspeth spotted some small black insects clambering around which proved to be *Telmatogeton japonicus*: this is the only Chironomid I have ever identified with any confidence. This species had already been recorded on the Lancashire side of the Mersey by Stephen Tomlinson in 2020. It has spread around the world from the Pacific, being reported new to Britain in 2013 (*DD* **20**(2)157).

In the last two years, I have also followed up my intensive survey of Houghton Green Pool (*DD* **29**(2)127). I went back there once a fortnight in 2021, and also surveyed a small area of secondary woodland adjacent to our 1960s housing estate, and the Chester Zoo Nature reserve which has newly established woodland and flower meadows with some adjacent wetland habitats. This year I have been making fortnightly visits to the Smithills Estate near Bolton. At 650 hectares this is the Woodland Trust's largest site in England, extending from the edge of the town up a broad valley with wooded streams and onto the moorland of Winter Hill rising to an altitude of 456m. My transect of 12 sampling areas spread over 1.5km starting between 250 and 350m altitude with a transition from herb-rich grassland with recently planted trees to open moorland with expanses of *Molinia*, bracken, heather and bilberry. This was along the steep side of the valley with numerous seepages and damp areas. With 15 minutes for each sample and 13 visits, this amounted to a total of 39 hours sweep-netting!

I have logged 3185 records of 512 Diptera species on IRECORD. It will be interesting to see if there is a systematic variation of species mix and richness with altitude and vegetation. There is certainly a noticeable bias towards northern species compared with my lowland surveys in VC59. I will mention here only the single specimens of the Sciomyzid *Ectinocera borealis* and of the Anthomyiid *Paregle atrisquama*, the latter only the second English record. It was also intriguing to find that the fourth most frequent species was the orange Lauxaniid *Meiosimyza illota* with 55 records: there are only 103 records nationwide on the NBN Atlas at the time of writing. I also had 5 records of the very similar *M. mihalyii*, which was first reported as a British species only in 2004 (*DD* **11**(2), 107). It was also present at Heyden Valley, in the area of several earlier records. I must thank Rob Zloch for originally alerting me to check for this species, which he has also found in north Lancashire.

A trawl though IRECORD for 2022 also revealed several new vice-county or regional records. Nicola Garnham found *Linnaemya picta* (Tachinidae) in VC60 to add to VC58 and VC59 records for this historically rare species (see *DD* **17**(1)77). Two Conopids completely new to Northwest England were identified by Dave Clements from photos: *Leopoldius brevirostris* found by Trevor Southward on Longridge Fell near Preston;

and *L. calceatus* found by Paul Brennan in Chorley, this being a species first recorded in Britain in 2018 (*DD* **25**(2)193).

Although not new to the region, 2022 saw unprecedented numbers of the locust blowfly *Stomorhina lunata* following a year without any sightings. As probably our most prolific IRECORD contributor, Pete Kinsella in Crosby on the Mersey coast provided 6 of the 17 records, the first on 7 July followed by a spate of 6 males and 1 female on ivy clumps between 2nd and 6th October. Other notable records from him were *Gonia ornata*, *G. picea* (Tachinidae), *Miltogramma punctata* (Sarcophagidae) and *Stratiomys singularior* (Stratiomyiidae). In *British Soldierflies* Stubbs and Drake expressed surprise that the last species had not been recorded on the Lancashire coast. Pete's two sightings follow one in Southport in 2021 and the first Lancashire record from near Warrington in 2018.

The overall result of our collective efforts in 2022 is the addition of 98 new vice-county or regional records so far, and more may of course still be in the pipeline. It is inspiring that we are continuing the great tradition of the LCFC. Modern keys, digital photography, computerisation of recording and the Internet have vastly increased the rate at which we can process and publish information, but there are still great tracts of the fauna where we have added very little, such as the Chironomidae, the Ceratopogonidae, the Mycetophilidae and the Phoridae.

Phil Brighton helophilus@hotmail.co.uk

A Fanfare for Fannids

Donald Smith

My copy of the Royal Entomological Society key to Muscidae by d'Assis Fonseca (1968) is looking a bit tatty now, the spine broken, the corners dog-eared and the page margins messy with accumulated scribbles. The cover is spotted with coffee stains and the pages yellow with their years.

The key has seen many struggles with bristles and dusting, many wrong turnings and some moments of relieved recognition. At the back are a set of pristine plates. These are six plates of the hypopygia of *Fannia* and *Piezura* species. If the muscids gave me trouble enough, two genera needing intimate inspection of the male genitalia were never going to be high on my list of taxa to tackle. Even after they were hived off into their own family – Fanniidae – I was never quite tempted enough to make the effort to get to know them.

But they have kept accumulating in my boxes – odd specimens from sunlit woodland glades, hanging out with the heleomyzids on fungi or turning up in the net among general sweepings. What seemed a smallish and nondescript muscid would turn out to have a pleasingly straight subcostal vein, a fetchingly curved A2 and, usually a pair of dorsal bristles in the apical half of the hind tibia and so be archived in the Fanniidae box. But lately, having managed to pin and label up the 2022 season's catch, and being a little less scared of calypterates, I decided to dive in. The RES key is available as a pdf (www.royensoc.co.uk), as is an updated key in The European Fanniidae (Diptera) *Acta Scientarum naturalium Academiae Bohemicae, Brno*, 31(2):80 pp (1997) by Rozkošný, Gregor and Pont. The newer key is structured differently from the RES one, giving two ways of, hopefully, getting to the right answer.

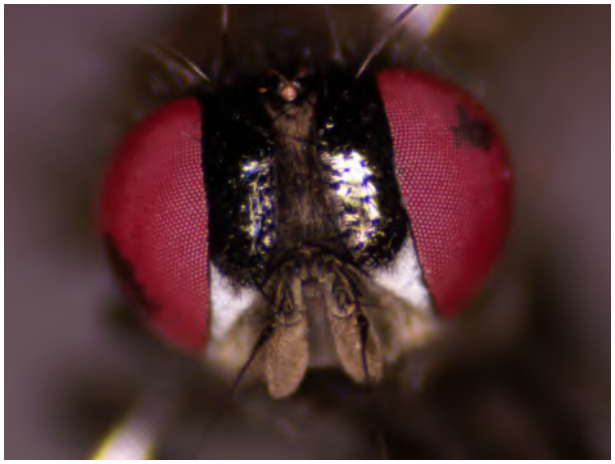
Fannia lustrator 15 5 21 spikes

Fannia lustrator 7 5 20 wing

What an interesting lot of flies they are – at least for the males! First honours go to *Fannia lustrator* (Harris, 1780) which is one of the larger species – the size of a middling *Helina* or *Phaonia* but with a curious hooked spine beneath the mid-coxa and a rapier-like spike emerging from the bottom of the sternopleuron – now what are they for? The mid and hind femora and tibia are bright orange, giving it a well-dressed calvary look, just the right trousers having been chosen for that shirt. Other species, have a stubby spike at the base of the mid tarsus, in the case of *F. armata* (Mg., 1826), combined with an apically swollen mid-tibia sporting a ventral pubescence in the style of a slightly cautious punk. Another leg curiosity is *F. coracina* (Loew, 1873) which also has swollen mid-tibiae but instead of pubescence sports a shiny black tubercle, more of a beauty spot than a pimple. Another distinctive species is *F. canicularis* (L., 1761) which has yellowish spots on the second and third tergites but rather boring legs. And mention must also be made of *F. mollissima* (Halliday in Westwood, 1840) with its jutting jaw, bouffant pre-genital tergites and wedge-shaped abdomen. After that, their splendours are maybe for the connoisseur, or the devotee of those hypopygial plates – I will need to get into the habit of extending the genitalia properly upon pinning.

challenging. I was making heavy weather of the process, fussing over the relative placement and size of bristles, assessing the curvaceousness of the lower calypter and agonising over the shininess of the frontal orbits. What helped make sense of them was remembering that, whatever dreams the novice might have of stumbling on something rare or completely novel, the bulk of what turns up in your net is going to be the common species. Judging by the males I had identified, and checking the distribution maps on NBN and the useful summaries in Phil Brighton's "The Diptera of Lancashire and Cheshire: Muscoidea, Part I" (2020 – available as a pdf online) what I should be looking for were *F. armata* , *F. canicularis* , *F. lustrator* , *F. mollissima* , *F. serena* (Fallén, 1825) and *F. sociella* (Zetterstedt, 1845). Once I had my eye in for these ladies it became much easier to recognise oddities such as *F. corvina* (Verrall, 1892) with its glossy black frontal orbits – just a shade to heavy on the mascara. One surprise was finding several specimens of *F. pallitibia* (Rondani, 1866), a common enough species nationally, the females of which have distinctively pale tibia and femora tips, the black tarsi looking like ankle socks against pale skin. Although I found that I had females from seven different locations in East Lothian, mostly from September onwards, I have not yet found any males.

Indeed of the 15 species I have found so far, I have both species for 7 species, males only for 1 species and females only for 7 species – either my identifications of females are unreliable or I am collecting in a way that biases against males. Indeed, among a series collected in a bottle trap set up over a roadkill hedgehog, females specimens outnumbered males by 10:1. Are the males up in the treetops perhaps? But however many times I go through them I am left with about a third of the females unidentified, either because crucial bristles differ between legs or are impossible to see because of the ways the legs are placed, or else because I can't decide between the options offered in the keys and become bewildered. At any rate, my foray into the fannids expands the NBN and iRecord data for the family in East Lothian – previously a single record of *F. canicularis* from Brian Hickman at a National Trust for Scotland property in 2010.



Fannia corvina

There are breeding records for the family from fungi, wasp and bird nests, leaf litter, rotting wood, carrion, dung and flesh. The larvae are unusually flattened in shape with a fringe of branched processes, these adaptations enabling them to survive in watery substrates. The puparia form within the skin of the final instar as can be seen in the photographs of honeycomb with puparia of *F. scalaris* (Fabricius, 1794) in Dipterists Digest 17: 29 (2010) in the note by Jon Cole. So I suppose my next challenge is to find some larvae, meet some of the missing gentleman and put a name to some of the elusive ladies. Truly, there is no end to this business.

Call for specimens

In 2022 we started a project to study the cuticular hydrocarbon profile of various Diptera species from the UK. We theorise that it is possible to distinguish different species using hydrocarbon profiles and can see several useful applications across science specialisms, including taxonomy and identification. For example, it may prove a valuable tool in separating cryptic species, identifying incomplete specimens, or matching females to males.

Cuticular hydrocarbons are present as a thin layer on the cuticle of terrestrial insect species, acting in the first instance as a desiccation barrier. To establish the profile, dry specimens are first rinsed with hexane. This sample is then run through a Gas Chromatography - Mass Spectrometry (GC-MS) process, and the resulting peaks depict the unique composition of hydrocarbons present on each species. To get a 'clean' sample, it is important that specimens have not been exposed to any chemicals that might affect their hydrocarbon profile, this includes ethanol and ethyl acetate.

Initial work has already been undertaken to determine the efficacy of this method (Moore et al., 2021) when working with museum specimens. However, the history of museum specimens is often unknown, with little information on how they have been caught, killed, prepared, or stored meaning that testing museum material is hit or miss in terms of whether a clean reading can be obtained.

Our current experimentation is looking to create a baseline profile for common diptera species from freshly caught specimens, which are collected into clean sample tubes, frozen and then mounted before being sent to laboratories at Cranfield University to be sampled. This work will allow us to establish if there is a minimum species size, create comparative data for further work with museum specimens, and begin building a reference database of results.

Material has been collected from the Oxfordshire area, as part of a small number of survey projects, the largest of which is at Hogacre Common Eco Park (SP 5082 0509) where identified materials will go towards both this project and building a species list for the area to inform land management decisions.

As this project aims to encompass as many species as possible, we are soliciting for donations of material. The minimum requirement is that specimens must not have been exposed to chemicals, so it is unlikely that there is a pool of material in existence. They can be any species, from any area of the UK. It would be most appreciated if interested members could collect specimens as part of their upcoming 2023 fieldwork, even just a few from gardens or local areas, that are then frozen. Material can be sent in this state, or once mounted if preferred. If it is possible to send identified material this would be greatly appreciated as it will speed up the process significantly. All material can be returned if desired after sampling, though each specimen will be given a sample reference number label which we would ask is retained.

Material can be sent to the address below, or it may be possible to arrange an in-person exchange at various entomological events throughout the year. If anyone has any questions about the project, please contact Zoë at the same address or via e-mail: zoe.simmons@oum.ox.ac.uk

Postal address: Oxford University Museum of Natural History, Parks Road, Oxford, OX1 3PW

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doi.org/10.1038/s41598-021-87221-y

Zoë Simmons & Hannah Moore

Conservation Officer report

Conserving biodiversity: the role of taxonomy

> "*No one will protect what they don't care about; and no one will care about what they have never experienced*."
> David Attenborough

COP15 provided a much-needed reason for some, albeit cautious, optimism about protecting biodiversity and tackling the climate crisis. Regrettably, none of the targets and agreements are legally binding.

The publication by the EU in 2022 of a "Red List of Insect Taxonomists" (https://tinyurl.com/bdcuz4sd) prompted me to think about a key component of conserving biodiversity – taxonomy.

Alpha taxonomy and the role of non-professionals:

Is the writing on the wall?

The obvious reality is that you cannot conserve what you don't know about. Taxonomy is fundamental to the conservation of biodiversity. If you don't know what it is how can you conserve it and monitor conservation efforts effectively? In what follows, I use the adjective "non-professional" in the sense of meaning "unsalaried".

Some definitions from Disney (1999) Insect biodiversity and the demise of alpha taxonomy. Antenna, 23: 84-88.:-

ALPHA TAXONOMY is concerned with the recognition and description of species;

BETA TAXONOMY is concerned with arranging species in a hierarchical classification and is "flourishing … particularly with the advent of new molecular data"

GAMMA TAXONOMY is concerned with characterizing infra-specific populations, again benefitting enormously from molecular techniques.

The correct identification of a species is a cornerstone of biological sciences. The relentless decline of alpha taxonomy as practiced by professionals in academic institutions has been documented in many publications over the last 30 years. There are few indications that things will change for alpha taxonomy in the foreseeable future, i.e. most of it will continue to be practiced by non-professionals. With the ageing of the community of non-professional alpha taxonomists and, more generally, those having expertise and experience in identification, an impending crisis of capacity looms.

The EU Report ("RLIT")

This report focused primarily on the taxonomic capacity of the professional community. There are, however, some specific references to the role of non-professionals in supporting taxonomic research.

Age structure. The RLIT reported that of those surveyed: "*Half of the taxonomists are within the 40 to 59 age group, 19% in the 60 to 69 group and 8% 70 or older. The least number, just 6%, are early career researchers. This age structure corresponds to the fact that young graduates must advance in their level of qualification and publication record before they become taxonomists, as confirmed by the data on education and qualification.*" Thus, more than ¾ of these taxonomists are 40+ years old. The long lead-in for formal taxonomic training on the professional circuit, reminiscent of the medical profession, means that there is a significant time-lag (around 10 years from graduating) such that professional capacity builds very slowly.

Building capacity. One of the "science" recommendations RLIT makes is to "*Increase the taxonomic capacity through dedicated knowledge exchange, education, training and development opportunities for professional taxonomists*". Alas, the report gives few details or examples of how this has been or might be achieved. In its strategic response the report states that: "*Taxonomic capacity can mainly be built at a country level by securing continuity of taxonomic research in museums, institutes, universities or similar structures; by developing suitable conditions where experts either are lacking or disappearing and by creating permanent jobs for taxonomists while reducing competition with other disciplines*." Might "*or similar structures*" here include a key contribution from the voluntary sector?

Coverage: biases and filling the gaps. In terms of species coverage there is clearly a bias towards families that are of obvious relevance to human health and economics. Such a bias and limited sample size has little meaning as a measure of "biodiversity". Phrases used in the report such as "*Diptera contains numerous important pollinators and is, therefore, an important order to cover*" (Section 4.1.3.) underlie this conceptual flaw in assessing and quantifying biodiversity. With regard to Diptera the report recognizes this bias iinasmuch as: "*There is some obvious variation in taxonomic capacity among Dipteran families. While the Syrphidae and Calliphoridae have Adequate Capacity, the capacity for Bombyliidae, Tabanidae, Lauxaniidae and Mydidae is Critically Low and for the Blephariceridae even Eroded.* ***Targeted funding mechanisms for such Diptera families can help to close these gaps*** [my emphasis]"

The report notes that while the four largest insect orders (Coleoptera, Diptera, Hymenoptera, Lepidoptera) are the most studied, their highly speciose nature leads to ratings

of Poor Capacity or Moderate Capacity for their taxonomy. Capacity for Diptera is rated Poor.

"**Citizen science**" and "**Parataxonomy**" The report makes some recommendations with regard to the involvement of the non-professional community. **Section 4.3.5** "*Parataxonomy and Citizen Science*" deals with the contributions made by non-professionals. It recognizes "parataxonomists" as "biological diversity technicians who are not necessarily fully-fledged experts in the field of taxonomy …. whose involvement has the potential to greatly increase the efficiency of monitoring and research on insects".

Recommendation SCI-B1 of the report (p. 24): "*Improve the collaboration of professional taxonomists with amateur naturalists*". This recognizes that "Specific programmes for citizen science should be developed by the European Commission with specific calls for concrete collaborations with citizen science initiatives and professional organisations, focusing on taxa that are: **i) species-rich, ii) understudied, or iii) bear special relevance for environmental, economic and/or societal reasons** [my emphasis].

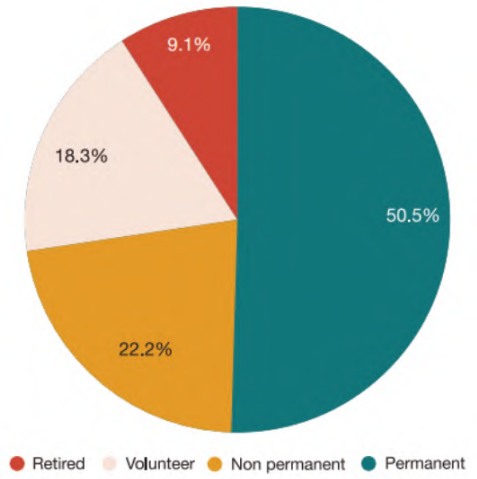


Fig. 11: Employment status of European taxonomists.

What might we take from the RLIT exercise?

Auditing "parataxonomic" capacity in the UK
From the concerns raised above, an audit of the capacity for alpha taxonomy in the *non*-professional community - parataxonomy - would seem to be an urgent priority. How many invertebrate parataxonomists are there in the UK? With some refinements the methodology behind the RLIT report could be used as a template for such an audit. Do UK invertebrate societies have an appetite for making a case for such an audit? Supporting and training "parataxonomists" is, surely, an urgent priority.

Any thoughts and comments on the issues discussed here would be very welcome: m.welch@nhm.ac.uk.

Mark Welch

[Editor's note: *We've discussed lack of Open Access to key journal articles as a "paywall" barrier to research by non-professionals in past issues of this Bulletin on several occasions*]

Adopt-a-Species

Prospects for the rare calcareous fen flies of Cothill Fen and Parsonage Moor, Oxon.

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

All these species have aquatic/amphibious larvae which feed on finely divided detritus or algal/bacterial films on mud or plants (microphagous). They live in shallow water, in shallow marly silt or waterlogged mats of stonewort algae (*Chara* sp) or water logged moss mats with tufa (lime scale) formation a key feature. They all live in Cothill Fen SSSI/SAC in Oxfordshire.

I last wrote in July 2022 when a summer drought and extreme heat had already followed a dry spring in Oxfordshire. In the fen the breeding areas are shallow wet runnels and peat cut pools. These had both dried down extensively. This year I saw no egg masses of *Stratiomys* sp. soldier flies on any reed leaves over the dried-down peat-cut pool areas, in positions I usually see a few. Is this a significant or had I just missed them? Had they laid elsewhere or lower down..? August continued dry and hot with the start of some rain only at the very end of the month bringing little relief in fen wetlands. For those of us with long memories, the worst drought since 1976, so it was said. But this 2022 drought was hotter and I note more widespread in Europe. Of course climate change is the cause. What will the damage to the early stages of flies breeding in the fen have been? Will they survive in future at this site?

I visit the fen more or less weekly, so let's start in late August, still hot and dry; paths to the fen were as dry as dust, the fen peat and vegetation a moister relief, but things not at all right. Devil's-bit Scabious flowers were wilting, something never ever seen before. Here late August is past the time here for any soldierfly adults to be still on the wing. On 26th August in very hot conditions, a peat cut pool (rather nitrate-enriched area) in the Cothill

NNR section that was drying down to mud with a thin film of water, was seen to have a number of patches of moving disturbance, with some things obviously wriggling along, moving through the sloppy mud all in the same direction, northwards towards the pool margin. What were they? Turned out they were mature fully grown *Stratiomys* sp. larvae, creeping as fast as is possible for such legless larvae; moving from the pool centre towards the shallow muddy drying vegetated margins. I took a few small videos of this migration. You can find the result on the Dipterists Forum website in the YouTube channel: https://youtu.be/n4ekOzjftRU

(Thanks to Victoria Burton).

Catching one of these larvae I determined it was of a Flecked General, *Stratiomys singularior*, due to the small pegs extending out sideways from each of the segments (see larval key in Stubbs and Drake. 2014). They were full grown, but now too late to emerge as adult flies; so I presume they were looking for a safe site to hunker down and pass the time until they could emerge in 2023, as suggested sometimes happens by Stubbs and Drake (ref above, p295) when discussing soldierfly life cycles. In fact a similar observation is described there of *Stratiomys* larvae crawling over the surface of mats of filamentous algae on a hot day in late summer in a shallow lake at Cuckmere Haven, Sussex.

I had not before fully taken in the observation in this text that '*…3 to 5 years may be needed to reach maturity and even then the adult may not emerge. Full grown larvae have been found in late summer, too late to emerge that year and almost certainly waiting for the next.'* The suggestion then followed that the larvae could wait until a suitable climatic sequence triggered emergence. There is so much more to find out regarding the larval stage of the life cycle of these interesting flies.

What about the autumn water levels in Cothill Fen? I monitor water levels in dip wells in Cothill NNR section monthly. Water tables in summer dropped well below the maximum botanists think is safe i.e. -10 to -20cms below surface; this being needed by the rare M13 fen vegetation assemblage, *Chara* stonewort algal mats were dead and white, tufa-forming mosses beloved of soldierfly larvae were dry and crispy to the touch. How damaging will this prove to have been? September did not really have enough rain to much wet the soils (or stimulate early fungi I noted) but this was followed by more than average rainfall all of October. This slowly filled some peat cut pools in Cothill fen, but this will have been rain water with no calcium, as we only get calcium-rich ground water from marginal seepages zones, so the chemistry will not be the most suitable for the rare species. Dip well data I monitor there have shown that groundwater levels around the fen margins are still very low, even now. Some dip wells in fen marginal zones remained dry to the bottom until the end of October and have been very slow to wet up. But in the centre pools the dead-looking tufa-forming mosses in the runnels have revived by November; the mounds of unhealthy white crispy *Sphagnum* bog mosses that exist above the calcareous groundwater in the pools have all greened up and are happily growing away again. The *Chara* stonewort mats are all re-growing under water from germinated spores as if nothing had happened, so what is the problem?

I wondered how many soldierfly larvae might have perished in the drying-down phase. Yes many of the species can survive drying down phases in shallow pools because of their tough leathery (sometimes calcium encrusted) larval skins, but the dried-out pool mud may have become too hot for survival once all visible water disappeared. Could any soldierfly larvae now be found? On 17th November I went out to see if I could find any in the re-wetted runnels with stonewort algae and mosses.

I looked at a re-wetted runnel in the Parsonage Moor section of Cothill. This section had suffered most from the drying-down because it has not yet had any remedial re-wetting by restriction of historic drainage. In four handfuls of waterlogged Chara stonewort algae I found two middle sized (not mature) *Odontomyia* larvae and in two handfuls of waterlogged, upright-growing tufts of Marsh Bryum *Bryum pseudotriquetrum* s.l. moss I found one small *Stratiomys* larva and three middle-sized *Odontomyia* larvae. I returned them all, relieved that at least all is not yet lost. Although of course I don't know how many I might have found in that position in a non-drought year. Was it a poor year for survival from eggs, wherever they were laid? That seems likely because after a few weeks the eggs hatch and larvae normally drop into water in the pool or runnel underneath. Do they then perish if it is dry under the egg masses? With life cycles taking up to 5 years, the impact of this drought year might not be apparent in adult fly numbers for years to come; always assuming this kind of heat and drought does not happen every year from now on…

Next year I think I will be deploying some of the Alan Stubbs half grapefruit skin live-traps in fen areas to concentrate a lot more on recording and studying larvae and their habits.

Judy Webb

Fly-fishing

Every story paints a picture

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.

Listed below are various Dipterists Forum's activities, our shopping list if you will of topics of interest to us all. Many are to be found in recent Bulletins. Do contact us if you are engaged in projects of interest to you or simply if you have a tale to tell. Help us keep everything buzzing.

A. Projects

Lots to get involved with amongst our various projects, actual or proposed:

- The Steve Falk digitisation project.
- Rob Wolton's Cairngorms project
- Zoe Adams' Baseline survey for rewilding project (p25)
- Rainforest Diptera - do you have a species distribution map which matches https://map.lostrainforestsofbritain.org/ ?
- Jon Cole records project
- Any regional or museum-based projects - a DIY "tree of life" method perhaps

B. Bulletin editorial

Regular and scheduled topics

Bulletin 96

- Brief reviews of books and aricles
- More from our ecologists please. Articles relating Diptera to various habitats.
- An introduction to the PANTHEON database which is a system of categorising habitats - request from Phil Brighton
- Choose a presenter at our Annual Meeting to write about. The Youtubes are good but written accounts can be amazing.
- Feedback on any Bulletin topic
- A budget. A costly task when you add up all the software, books etc., it'd be nice to be able to commission art work too.
- Stories from the Recording Schemes and others. Start a newsletter now even though you may not finish it for a long time.
- Features editors & journalists to help investigate, report, compile, collate etc. Contact us to discuss areas of interest to you.
- Someone to review all the stuff on our Youtube channel, there's some fascinating stuff on there like Judy's video of *Stratiomys* larvae, the survey for *Caliprobola* in the New Forest and our Annual Meeting talks
- Copy Judy Webb into all Bulletin submissions & messages .

C. Recording

- **Anything the Recording Schemes are looking for.**
- Site datasets for publishing as Open Data to NBN Atlas (e.g. Diptera of Windsor Forest) as requested by Judy Webb, Mark Welch and others.
- Records from Summer Field meetings particularly Epoch 3.
- Stories arising from your use of Open Data (e.g. maps from NBN Atlas) be the context regional or taxonomic.
- **iRecord for Dummies** - any ideas?
- **Identifiers** (British Diptera Identifiers (BDI))

Additional experts to sign up to verify groups on iRecord

Additional novices and experts to sign up to verify groups on iNaturalist - the Recording Schemes really need everyone's help with this, without you some of their work is stalled

- **Maps**. Putting together a distribution map for species of interest can be informative. A range of methods are available from those via NBN Atlas to more complex ones (see https://tinyurl.com/32243mjs) This topic is one of our Dipterists Forum formal objectives.

Quick method: copy this link into OneNote (all on one line)

https://easymap.nbnatlas.org/EasyMap?tvk=NBNSYS0100004229&w=332&b0fill=ff0000&retina=2

Click it to view the map. Change that TVK code to any species you like, those are easy to find, type "nbn coremacera marginata" into DuckDuckGo and it's listed in the URL. Or use Chris Raper's online UKSI ists from https://uksi-sandbox.nhm.ac.uk/index.php

Build your own gazetteer in OneNote

D. Photography

We've a core of readers keen to know some of the techniques and kit you all use to snap flies. Clearly we can't hope to conduct detailed reviews but talk to us about short & sweet ones. Brief notes on the following topics would be of interest:

- Experiences with other brands - Canon, Sony etc.
- Macro lenses & macro flash setups (studio and field)
- **Focus stacking**. We've done this before, even run workshops (Stuart Ball, Cardiff Museum) but systems have improved over the years and new software is now on the market (e.g. Affinity Photo). More on this topic is planned for a future Bulletin so share your experiences with the editors soon.
- Flickr - your experiences and comments (read Steve Falk's account in a recent Bulletin)

E. Microscopy & other techniques

Thumb through several Bulletins and discover we've featured a wide range of techniques, too wide-ranging to list them all. The following are current:

- Rearing techniques + trapping techniques
- Pins, pooters & pill boxes - techniques and gear
- **Microscopes** - best specs to look out for and the most economical current buys
- Expressions of interest in the use of QGIS to make UK distribution maps, (tip: look at FSC resources)

No shortage of ideas. Do contact us to help create our next "phenomenal" issue and further our objectives.

Darwyn Sumner, Editor

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.

Recording

The main features in this Bulletin are:

- Appeals to support the efforts of the Recording Schemes
- iNaturalistUK projects
- NBN publicity & Open Data usage
- News from various Recording Schemes
- Summary of Expeditions & Projects

Recording Scheme support

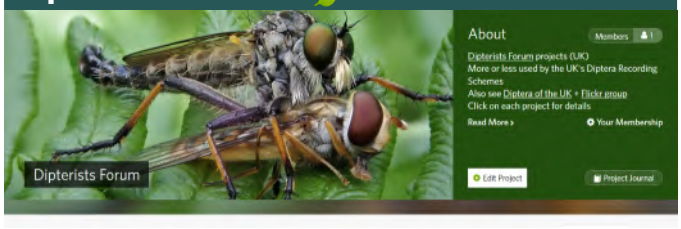
Feedback to the Recording Schemes is important. The organisers have put an immense amount of effort into their specialist groups and they rely on responses from those with similar interests to respond to them in various ways.

One useful way you may be able to help them is by

iNaturalistUK

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

Dipterists Forum



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.

NBN Publicity

NBN's iNaturalistUK initiative has its own page publicising various projects in the UK. Projects recently set up by Dipterists Forum feature 5 times on the page. Our umbrella project for all the Recording Schemes is one of three "New and Noteworthy", The collection of sites for VC 27 & 28 (Norfolk) initiated following our summer field meeting is amongst their "Featured" projects whilst two specific schemes appear elsewhere on the page

https://uk.inaturalist.org/projects

A terrific bit of publicity for Dipterists Forum from NBN.

NHM Diptera project 2022

The Natural History Museum (Jessica Wardlow) set up a project during the summer. She chose 13 popular Diptera and confined the dates to between June 1st and September 18th.

https://www.inaturalist.org/projects/fly-finder-id

Well worth a browse for all the facts and figures. Most records by Adele Cammies with Matthew Vosper coming second. Top identifier is an hymenopterist, second an Austrian and third retired LRC founder, Steve McWilliams. A whole bunch of us had a shot at being top of the "most species" chart until Jessica A pipped everyone with 10 species.

Three Conopid species in their list, which brings the iRecord verification queue to 391 now.

Any suggestions for this year's 13?

Analysis

It can be quite tricky to keep track of the figures of Diptera recorded throughout the year. Individual Recording Schemes are best placed to keep an eye on those figures. At one end of the scale the Hoverfly Recording Scheme keep a close watch and you'll find that information is part of their regular newsletter reports. At the other end of the scale you can get quite excited by the addition of two new records to our smallest, the Oestridae Recording Scheme, so botanist Dan Wrench becomes something of a celebrity with his *Gasterophilus intestinalis* photograph on iNaturalist and the Oestridae count there is now 26.

If you remember to write the figures down occasionally then iNaturalist can be a good site to monitor progress. That overall figure of 29.969 when we first set up the iNaturalist Recording Scheme project stood at 44,658 in mid-November and that doesn't include the hoverflies (they'd swamp the leaderboard presentation) Compare that to our DF NBN Atlas total of 85,068 and you can see that there's an enormous potential if every one were processed through iRecord to NBN Atlas. Realistically maybe half or less are identifiable from photos (see Roger Morris writing in British Wildlife) but there are marked improvements on some of them, especially those that are more easily recognisable. Here are a few examples of **proportions of records raised to ResearchGrade** (see the doughnut chart on each one):

1. **Ian Andrew's Heleomyzid Flies raised from 13% to 29%**
2. **Micropezid & Tanypezid raised from 37% to 59% due to contributions by international experts**
3. **Donald Smith's Kelp Flies raised from 12% to 16%**
4. **Soldierflies steady at 60%, still plenty of scope to raise this figure**
5. **Sam Rees' Flat Footed flies project steady at 25%,**
6. **Conopidae steady at 62% + 4212 records on iRecord need verification**
7. **Small acalypterates 18%**
8. **Sepsidae 8% - a good proportion need microscope work**
9. **Craneflies 17% - use your new book**
10. **Sciomyzidae 33% - *Tetanocera* can't be differentiated from images**
11. **Tachinidae 64%**
12. **Sarcophagidae 6% - *Sarcophaga* can't be differentiated from images**
13. **Scathophagidae 56%**
14. **Chloropidae 3% - a good proportion need microscope work**
15. **Anthomyiidae 3%**
16. **Agromyzidae 64%**
17. **Blow Flies 12%**
18. **Oestridae 80% = highest ID score**
19. **Bibionidae 27% - organiser for this scheme is yet to be arranged**
20. **UK Diptera as a whole steady at 49% (this figure includes hoverflies)**

The degree of success is down to several factors, the intrinsic identifiability of each group from images, the effort that the particular recording scheme organiser (and partners) make and the photogenic properties of particular species (e.g. lots of *Coremacera marginata*) For those undecided as to which group to get involved with the above is a fair guide, the higher figures are clearly very doable whilst the low ones may be poorly identifiable from photographs but the schemes could use a partner/assistant.

Take a look at some of those Recording Scheme iNaturalist projects to see if you can confirm any images posted there. An opportunity to use some excellent keys or books you just bought.

iRecord: Doing the same sort of above analysis for iRecord material is a much trickier job. Martin Harvey did one in the last Bulletin though.

iNaturalist is a great way for a Recording Scheme to communicate with their contributors

Joining iNaturalist projects

Visitors to any of the above projects may join them as a member. This may seem a trivial thing but it has a couple of advantages. Firstly, each time you upload an image, you'll see one or more icons on that image's page. If it's an image from a particular Recording Scheme it'll show their icon. If your record happens to fall within a particular site that's been set up as a site project (see above) it'll show that too. The projects you've joined will help you keep track of your stuff. So for example if you've joined the Cranefly project then it becomes easy to track all your cranefly images. If you record regularly in a particular site (e.g. Holt Country Park + SSSI) then you'll not only be able to track your stuff from there but also the images that everyone else posts too.

From Dipterists Forum's perspective it's useful to get some idea of the popularity of the Recording Schemes. The umbrella project itself now has 21 members. Individual Schemes vary, my Micropezid one has 3 (the European version took 2 years to build up to 17.) Chris Raper's Tachinidae has been established for some time and he's got 6 as does the recently formed Cranefly project, the Sciomyzidae are next with 4. So far these figures are not good indicators of popularity, for many of them even the scheme organisers haven't signed on to their own projects. They're missing out as the iNaturalist projects are a super way of making contact with keen recorders and international experts.

It's not possible to know how many of our Dipterists Forum membership are signed up to iNaturalist, so far I reckon to have spotted only around 20. Many of the diptera images uploaded to iNaturalist will have come from naturalists who specialise in other disciplines or are simply casual enquirers.

If you do happen to sign up, your first collection should be that of the various Recording Scheme projects - that's the kind of feedback that's most encouraging, even if you do nothing after that except enjoy the pretty pictures.

Recording Scheme assistance

Volunteering to partner a Recording Scheme organiser is a long-established tradition in the Diptera Recording Schemes. Stuart & Roger with David Iliff for the Hoverflies is the first to come to mind and they've expanded their team considerably now. Chris & Matt partnered up to do the Tachinidae long ago, Alan, John & Pete did the same for the Craneflies and I fell into the Sciomyzids way back.

All the schemes would welcome volunteers no matter what their particular skills are. One example would be skills at putting together newsletters; I can't promise the level of adventure as boy reporter Tintin but I'm certain David Iliff would agree that it's very interesting to be first to hear all the stories.

A whole new realm of volunteer opportunities opened up with iNaturalistUK, two good examples are Sam Rees doing the Flat-footed flies there and Jocelyn Claude making inroads on all the Psilids on my Micropezid site.

Needn't involve much labour for the busy experts either, when I offerred to do all the iRecord donkey work for the Dryomyzidae Steve Falk gave us the thumbs up and, with his approval, some of those records have begun to drift onto the NBN Atlas.

In terms of difficulty tech demands are variable, ranging from iRecord verification (which is a breeze) through to Scratchpads, GIS and statistical analyses.

So if you've an interest in a group and a wish to get involved then contact them. Helping the Recording Schemes do their stuff is what Dipterists Forum is all about.

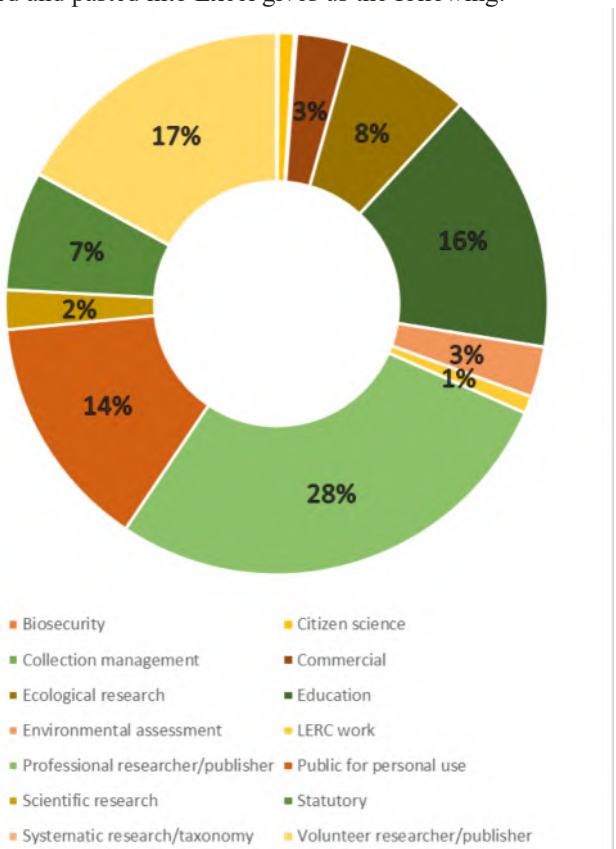
NBN Atlas - Open Data

Valuing and using your records

The value of all the records passed through to NBN Atlas via the variety of methods we all use is a complex subject. Taken as a whole across all taxa it permits the monitoring of the state of our environment and in doing so helps protect it.

Illustrating the Open Diptera Data is possible to an extent, if you visit the Dipterists Forum's partner page at https://registry.nbnatlas.org/public/show/dp172 and scroll all the way to the bottom there are a number of charts which may be of interest. A surprise that Scotland and Wales combined have less than a quarter of the total, despite our numerous Welsh Field Week visits. Notable is the doubling of records in the 2010-2019 decade compared to the previous one. There is also a pretty interactive doughnut chart of the number of records in each of the various Diptera Families. Sciomyzidae being the most numerous, followed by Sarcophagidae then Dolichopodidae and Heleomyzidae. All surprisingly different to our iNaturalist chart but some of the big schemes (Soldierflies, Craneflies) don't use our Dipterists Forum page so we can't include them.

The actual usage of the records is shown as a table, your efforts have resulted in **767,681 downloads** for various purposes, Copied and pasted into Excel gives us the following:



Still a little challenging to interpret but the big ones are the 28% professional researcher (pale green) and the 17% volunteer researcher (yellow) both of which could include status assessments or other work by our schemes. The 16% dark green (education) and 14% orange (public) fulfil our objectives very well. The remainder include a good deal of formal day-to-day conservation work. NBN's Sophie Ratcliffe tells me that they are looking into that 3% commercial use (amber), we may get to know more about that eventually.

Darwyn Sumner

Where are all our records?

The doughnut chart on page 1 shows this particularly well, a reduction in the increase of Open Data on our Dipterists Forum partner page at https://registry.nbnatlas.org/public/show/dp172 in recent months, a relatively thin white slice.

Epoch 3

Several Epoch 3 datasets were added by me last year and I'm currently in talks with Sophie Ratcliffe of NBN over the adding of a few backlogs. For many of the Field Weeks (2003 to 2014) we just didn't get any of your records so several years are complete blanks. If you're wondering where those records are, they're mostly still in your notebooks. Spreadsheet methods are a fairly straightforward solution used by several of us, contact me if you'd like some help with those.

Epoch 4

The first of the Epoch 4 Field Week datasets (**Stirling 2019**) were processed from a dataset sent to me by Martin Harvey from all the iRecord submissions. All I had to do was fill in the metadata form then send it and Martin's iRecord dataset to Sophie.

A similar method is proposed for future Epoch 4 datasets, the **Cornwall 2021** (4074*) dataset and the **Oxford 2022** dataset are overdue (see Bulletin#93) One issue Martin and I have to resolve is a way to incorporate iNaturalist records into those datasets, they don't get the Field Week "flag" that allows Martin to apply a simple filter on the iRecord silo and thus extract a dataset. Not many of us are using the iNaturalist method at the moment but numbers submitted via that platform are increasing and will continue to do so.

Norfolk 2022 (3532*) won't be ready until Spring 2023 to give everyone time to work through their specimens. I'm a good judge of that timing as I'm probably the laziest (still got to do John Mousley's Micropezids.)

Recording Schemes

The white slice on our Dipterists Forum green doughnut chart (p1) is all down to work by the Recording Schemes this time. Several of the numerically small schemes have added 755 in total since the last Bulletin. There may be others but we can only analyse those datasets which are located on the Dipterists Forum partner page (ask Sophie and she'll transfer your scheme's dataset to our page)

This is all work done by verifiers on iRecord. Considerable numbers of records are being added to iRecord but they are not yet passing from there to NBN Atlas where they become Open Data.

Expedition iNat Projects

We've set up iNaturalist projects for our field meetings on a few occasions previously. A prerequisite of course is that attendees post some photographs onto iNaturalist. The projects then, as iNaturalist themselves are at great pains to point out, are simply a filter.

You'll find them all listed on the journal page at

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

Recording Scheme News

Small Acalypterates Recording Scheme

A fourth project has now been added to this scheme, the **Dryomyzidae**. See Newsletter #2 in this Bulletin

Darwyn Sumner, Nigel Jones & Steve Falk

Cranefly Recording Scheme

Newsletter #40 in this Bulletin

John Kramer john.kramer@btinternet.com

Agromyzidae Recording Scheme

Barry Warrington and I chatted about rearing, he writes:

My rearing method, although pretty basic, is very successful and I must have reared at least 2k adults. What I find key for Agromyzidae is not letting them dry out or get mouldy. Many people just pop the leaf in a bag and expect an adult to emerge or place the puparium in a pot, stick it in the garage over winter and expect the adult to emerge in the spring. This very rarely proves to be successful.

Barry then expanded on his method as follows:

During the spring/summer, leaf mines are collected and placed into ziplock bags as this usually allows the larva to complete feeding before the leaf wilts. The resulting puparia are then collected (or removed from the leaf if pupariation is internal) and placed into one of the jars with gypsum in the bottom. It is then lightly misted every day until the adult (or wasp!) emerges. For species that are univoltine or mines collected later in the year, the puparia are initially put into one of the jars but are then placed on the filter paper on the bed of gypsum and placed in the garage, usually in November.

Jar with Gypsum ($CaSO_4 \cdot 2H_2O$) & puparia

During the winter, I mist the whole tray (p4) twice a week.

These are then brought indoors on 1 March and each puparium is transferred into a jar with gypsum in the bottom and misted every day. Adults usually start to emerge after about three weeks. I have great success doing this, with leaf miners, stem miners and stem borers. I have also reared a gall-causer by taking stem cuttings with galls present in the winter, placing the cuttings in a plant pot with soil, leaving outside all winter then bringing inside in March (then placing an insect bag over the gall to collect what emerges).

Scratchpad research site at https://agromyzidae.myspecies.info/

iNaturalist images at https://www.inaturalist.org/projects/national-agromyzidae-recording-scheme

Barry Warrington agromyzidaers@gmail.com

Soldierfly Recording Scheme

Newsletter #9 in this Bulletin

An iNaturalist project has been set up as an aid to tracking anything you may have contributed (*Ed.*)

Hoverfly Recording Scheme

Newsletter #72 in this Bulletin

David Iliff davidiliff@talk21.com

Stilt & Stalk Fly Recording Scheme

Thanks to iNaturalist users confirming some of my postings, I can't verify my own and it looks like I'll have to devise a key to ensure poor *Calobata petronella* gets recognised. Records there have benefitted from identifications by Jocelyn Claude and Jere Kahanpää who have a much better eye for tricky Psilidae than I.

There's a UK iNat project for just the UK now at https://www.inaturalist.org/projects/micropezids-tanypezids-uk do join it so that you can keep an eye on stuff coming in (busy from May onwards) and I've a newsletter under construction due out hopefully before the next Bulletin, I'll post it initially on my Scratchpad at https://micropezids.myspecies.info/

Darwyn Sumner www.inaturalist.org/people/202372

Lesser Dung Fly Study Group

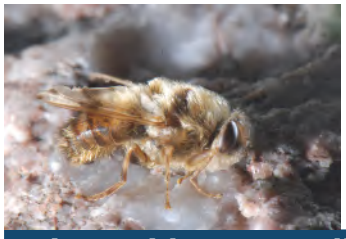
Newsletter #4 in this Bulletin

Presentation at our Annual Meeting, check our Youtube channel

Mark Welch m.welch@nhm.ac.uk

Oestridae Recording Scheme

Top of the pops in terms of percentage identification on iNaturalist. Then again not to hard to achieve with only 26 records there. I've seen Andrew's recording scheme spreadsheet and there are a few hundred at best, he's chased up historic material so the map I did in a previous Bulletin is informative. A super picture gallery on iNaturalist and a great candidate for another Open Data set on NBN Atlas.



I took a few shots of specimens that Andrew brought back during our 2009 Swansea expedition. Now if he gave me names and locations for them I could make that 28.

Darwyn Sumner

Sciomyzidae Recording Scheme

Following my summary in the recent newsletter, records have continued to flow in. No longer much in the traditional spreadsheets as nowadays those spreadsheets are uploaded to iRecord. There are now 2098 records there awaiting verification, of which 576 have images. A job for somebody but despite the popularity of the group there's no team checking them so that they pass to NBN Open Data, there's just me. If those 576 had been put on iNaturalist instead then the whole world of expertise would have been checking them, like the 42 records in iRecord's iNat queue which were soon dealt with.

Reappraise your recording methodology please after taking a look at https://www.inaturalist.org/projects/sciomyzids-uk where the top 10 team of experts are Ian Andrews (UK), Sam Rees (UK), Jonas Mortelmans (Netherlands), Jere Kahanpää (Finland), Steve McWilliam (UK), Katja Schulz (USA), John Bratton (Wales), Even Dankowicz (USA mollusc expert), Marie Lou Legrand (France) and me, the sole iRecord verifier, too unskilled and time-poor to look at the sorry 576.

Darwyn Sumner

Muscidae Recording Scheme

Someone is showing an interest in this, enquiries are being made

News & views

That's only about 1/3 of our Recording Schemes. If the others have news and haven't enough for a newsletter then drop a line to the Bulletin editors and we'll add your snippet here.

As for **recording methodologies**, each Recording Scheme is perfectly at liberty to choose their own preferred system as it's they that are having to deal with incoming records. One system does not necessarily suit all, for example the Hoverfly Recording Scheme has focussed heavily on corporate media methods and now has a Youtube video of a system they'd like to be adopted. Some schemes are happy with desktop systems and spreadsheets or just a simple email, others with iRecord and yet others prefer iNaturalist (for pictures.)

Please take note of the preferred system of each one, help keep them happy as they do an amazing job.

Other Projects

Steve Falk pre 2014

Several Recording Schemes have now worked through this material from Steve's folders (he bungs everything on iRecord nowadays.) We know of Anthomyiidae, Sciomyzidae, Micropezids & Tanypezids (Stilt & Stalk) and all the Smaller Acalypterate Families.

A very significant collection as can be seen from the *Dryomyza anilis* map in the newsletter. If other schemes wish to have a crack at extracting theirs then the methodology and resources are to be found in recent Bulletins. Do let us know if you make a start.

Jon Cole

Jon was very assiduous in communicating with the various Recording Schemes over the years and one supposes that a high proportion of his recording work is now in the public domain. The remainder, his notebooks and collections are now at Oxford Museum. It is likely that further records from there will arise through some form of standard museum accession system. If we can identify that system we could estimate how long that process will take to upload amy remainder as Open Data.

Verification

Shortage of verifiers is the main bottleneck to getting records moved from the BRC silo to Open Data on NBN Atlas and the reason for the BDI appeal in the last Bulletin. Martin and I compiled a spreadsheet list of all the iRecord verifiers (see last Bulletin) and the number of those haven't increased since. I also put together a video to show how easy the iRecord job is.

As verifier you work your way through the unverified iRecords in your scheme and periodically Martin will transfer them to the NBN Atlas dataset you've set up to receive them.

Though the expertise we have in Dipterists Forum is considerable and many seem to enjoy having a crack at identifying iNaturalist pictures, iRecord verification is the key to one large Open Data door in the UK.

Do sign up and have a go at something, you needn't be a scheme organiser but you will need the authorisation from them for Martin to add you. Ask me about Sciomyzidae for example and you could double the white slice of our green doughnut (p1) in an hour or so.

Darwyn, Jane & Martin H.

Location reference tools

Chances are that whatever sophisticated method you might use for looking after your own personal records (biological recording software such as Recorder 6 or Mapmate, image organiser such as iMatch) then at some point you'll find a use for a detailed record of where you were.

There are a number of online tools that can help out with spreadsheet and other jobs related to working out the four Ws (who, when, where & what), the following are handy for working out things related to the "where":

Geospatial converters

Utilities like Google Earth or iMatch are helpful for determining or recording geospatial references but they don't produce OSGB grid references. They work on worldwide Latitude and Longitude figures, ours is just one of many such grid systems devised by each countries mapping agency throughout the world.

There are online calculators though which will convert from Lat/Long to our OSGB. Two favourites, both from Ordnance Survey are as follows:

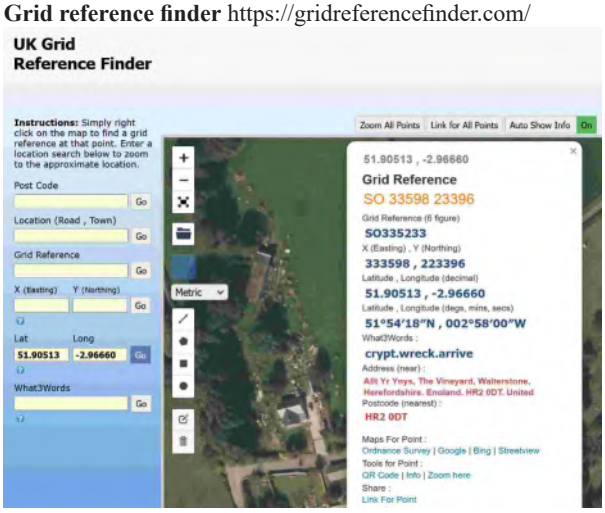
1. **From lists of Lat/Longs**

   Batch convert tool https://gridreferencefinder.com/batchConvert/batchConvert.php

   This works nicely from two adjacent columns in a spreadsheet (ensure that Lat is before Long) provided they are in decimal format - you may have obtained these by copying from Google Earth, iMatch or from your GPS files.

2. **From a single Lat/Long**

   Grid reference finder https://gridreferencefinder.com/



Several useful functions here, you can copy the OSGB and paste into your spreadsheet, the postcode into your SatNav or send a friend the What3Words code. They can use that code to find the place using the same utility above or via mobile phone.

Vice County calculators

No need to pore over a map to work this out. If you need this for your spreadsheet list then there are two excellent online tools that can be used:

3. **From lists of grid references**

   Cucaera: https://www.cucaera.co.uk/grid-ref-to-vice-county/ simply prepare your list, separating each grid reference with a comma, copy then paste it into the top box, Disconcertingly this is only one small box but it'll accept quite huge lists. Hit the Go button and up pop the results:

Results

Grid reference	Vice-county
NH9938422274	VC95 Moray
SK5277108784	VC55 Leicestershire (with Rutland)
TG2191224895	VC27 East Norfolk
TG0840620397	VC27 East Norfolk
NZ5350027300	VC66 County Durham
TG2967232160	VC27 East Norfolk
SK5280008600	VC55 Leicestershire (with Rutland)
SO3359823396	*too close to the border (@ 10m resolution) to get the vice-county*
TG2185424875	VC27 East Norfolk

This utility is written by Charlie Barnes of Lincolnshire ERC. That list can now be copied and pasted back into your spreadsheet. Note that it couldn't resolve one of them, so it's off to the BSBI site:

4. **From a single grid reference**

   BSBI (Botanical Society of Britain & Ireland) has a suite of tools at https://database.bsbi.org/gridref.php

This is a substantial update to their previous utility. If you've an interest in the botany there then that "View taxon list …" will bring up all the recorded flora (no lower Phyla or any fauna I'm afraid.) Lots to play with there. Though you may find the elevation estimates useful be aware that your GPS will have recorded it more accurately.

Photographers: The topics of **Macro Flash** and **Focus Stacking** are in preparation for the next Bulletin. They'll require your contribution so contact the editor with your ideas, setups, kit and pictures as soon as you read this.

Review

We're always on the lookout for items of interest to review, anyone is more than welcome to contribute. Habitats that are of interest to us has become a bit of a theme, wet or sticky ones by me but perhaps someone else has their own favourites.

Reports

Water

The website of **Freshwater Habitats Trust** is well worth a visit. Not really somewhere you can go and have a chat though they do use corporate media sites. Alongside their opportunities to do some pond-based volunteering they've some interesting publications; in addition to a number of research papers there's a terrific downloadable document on the freshwater areas in the Breckland. Not just ponds though, ditches, springs and flushes feature amongst their interests. I've got my order placed for their CEO's new New Naturalist book "*Ponds, Pools & Puddles*" (#146) and anticipate a good wallow in February.

https://freshwaterhabitats.org.uk/

Rivers

Whatever online map you use to display the rivers in the UK you finish up with a spidery network that's pretty hard to interpret. Best bet is to find an old printed gazetteer or atlas; not easy to track one down that shows what you want (physical geography). My favourite is J.G. Bartholemew's "*The Survey Gazetteer of the British Isles*" from 1904 with its county maps of drunkenness, pauperism and lunacy (very much like Phil Brighton's VC map of Anthomyiidae) Except for a map of lighthouses, canals and navigable rivers I drew a blank there. Though you'll find many travel guides and atlases in book shops, few feature physical geography.

The World Wildlife Fund do an online map at https://www.wwf.org.uk/uk-rivers-map which shows the condition of all our rivers. It uses OSOpenMaps data and shows the clean ones in blue, scroll down the side panel and you'll read why yours is dirty.

A good deal less spidery is the Environment Agencies "Statutory Main River Map" at https://tinyurl.com/4jeexcvm Compare the picture you get with this to the WWF map in the Norfolk Broads where we held our field meeting last year and you'll see the EA map is more decipherable. For GIS users, both layers are downloadable for use in QGIS, though sadly the EA layer lacks river names.

If you're interested in exploring online rivers still further then take a look at https://accessmap.riveraccessforall.co.uk/ which addresses one of the issues regarding poor access to rivers which was raised in Nick Hayes Trespass book: *Where, in the UK, am I allowed to paddle?* The map is of interest but most useful is the list of named rivers, find the one that interests you and the map will zoom in on it and give you a useful set of facts (try the Bure in Norfolk.)

Quiz question: Name the major rivers of your county (Duddon, Hodder, Ribble, Calder … erm) without using the internet.

Could you hunt diptera from a canoe? Steve Garland had a shot at it following our field week and the Olympus Tough cameras are totally waterproof.

Peat bogs

If you're on the lookout for some cracking sites to visit then this one takes you to many places that will be familiar to you if you attended several of our Field Meetings:

Clifton Bain: The Peatlands of Britain & Ireland: A Traveller's Guide

It's a guide so just the thing to get before you plan your 2023 field visits. No index but one big clear map facing the contents page listing all the sites/regions.

For a more in-depth peat bog experience then the following may be technically more enlightening

Spitzer, K., & Danks, H. V. (2006). Insect Biodiversity of Boreal Peat Bogs. Annu. Rev. Entomol., 51, 137–161. https://doi.org/10.1146/annurev.ento.51.110104.151036

Surprisingly I couldn't find a New Naturalist book on this subject

Temperate Rainforests

Are you still hunting around for examples of such things? Following the book on this subject (see last Bulletin) Guy Shrubsole now has an article about it in New Scientist (3rd Dec, *Britain's lost rainforests*) and it seems we have around 130,000ha. of it. Favourite places are Devon, the Lake District and the western highlands of Scotland. I reckon I found one in the Peak District:

Fin Wood, Monsal Dale (this place is at, or near, sites recorded as rainforest at https://tinyurl.com/z8rvnvsh Guy Shrubsole's public mapping initiative)

No doubt a familiar habitat to many dipterists, the ecologists will have taken notes but does their classification include rainforest? If John Kramer or Martin Drake had been with me on that trek then I'd be on my second pint in the Monsal Dale Hotel before I saw them again.

I keep dreaming up imaginary books I'd like to read, how cool would "*Diptera of Temperate Rainforests*" be? A simple list might be something the Devon Fly Group could focus upon.

Non-imaginary books are a little easier. The following was on Waterstone's shelves after Christmas:

The Lost Rainforests of Britain

Shrubsole 2022
~£15 hardback

Though I've had little time time to review this it's turning out to be a cracking read so far. Story-based rather than Clifton Bain's book on this topic (Bulletin 94), Shrubsole recounts how he began to recognise this important habitat, investigate it throughout the country as a naturalist (bryology & lichenology) and set up methods to discover its extent. Sadly no diptera in the book but we've all visited such sites without recognising them as this particular habitat. Yarner Wood for example is a temperate rainforest and was visited by a huge team of us during our 2011 Exeter Field Meeting, we even set up a malaise trap there.

Journals

BQ Quarterly

Sadly this publication has now closed down. Did any dipterist half start an article for them? If so then the editorial team would be glad to discuss publication.

Literature

Diptera.info has a section on Literature that's worth perusing from time to time.

Fly Times is also well worth keeping track of. I was particularly intrigued by an article in the latest issue by Vladimir Lantsov on how to collect and set craneflies without losing legs. **NADS** manage to combine a newsletter and proper published papers into the one publication. If you've not downloaded all the issues of Fly Times yet then have a go at http://www.nadsdiptera.org/News/FlyTimes/Flyhome.htm Find out what Adrian Plant is getting up to in Thailand nowadays.

Published papers:

Life-history strategies

Verberk, W. C. E. P., Siepel, H., & Esselink, H. (2008). Life-history strategies in freshwater macroinvertebrates. Freshwater Biology, (53), 1722–1738 https://tinyurl.com/2p86skd2

Another gem, this should be read and referenced before you write (or read) anything about diptera ecology or life-histories. It's a real eye-opener.

"*Species traits and environmental conditions are connected through life-history strategies, with different strategies representing different solutions to particular ecological problems*"

Verberk's examples are, of course, all aquatic (Institute for Wetland and Water Research in the Netherlands) but there's stuff in this paper about diapause, synchronisation of emergence, dispersal and evolutionary development that could be extended across the whole range of habitat types (and flies.)

A great starting point for some enterprising diptera ecologist to explore the world and a very useful perspective for us to view it whilst on our expeditions.

Diapause

Denlinger, L. (2022). Diapause among the flesh flies (Diptera: Sarcophagidae). European Journal of Entomology, 119, 170–182. https://doi.org/10.14411/eje.2022.019

If you have an interest in life-histories in diptera then this is well worth a read. The Sarcophagidae are very different to the example used on page 4, these diapause in the pupal stage. Intriguing because some of them don't diapause at all and surely the development of diapause tricks to withstand colder conditions during the pre-Oligocene eras were just as important as morphological tricks in allowing species to exploit new regions as the climate cooled.

After reading this take a look at Stuart Ball's Sciomyzidae key with details of their crazy diapause strategies.

Tree of Life: Acalypterates

Jackson, M. D., Marshall, S. A., & Skevington, J. H. (2019). Placement of Micropezinae (Micropezidae) on the Diptera Tree of Life: a Molecular Phylogenetic Approach (Guelph). Retrieved from https://atrium.lib.uoguelph.ca/xmlui/handle/10214/15240

Don't be misled by the title, this contains over 60 pages of "preferred maximum likelihood phylogeny" figures depicting, well, the closest that method comes to a tree of life. To establish the position of the Nerioidea Morgan Jackson analysed a huge number of related taxa. His supervisor was the guy who wrote **the** book on Diptera. An amazing read on fly evolution too.

Books

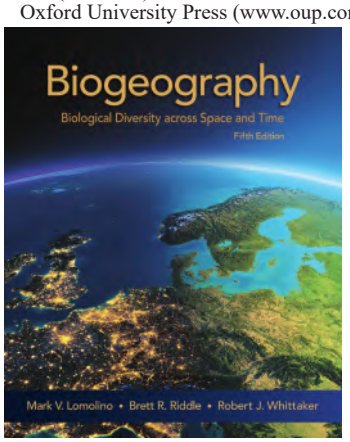
I'm still on the hunt for books to augment a growing library on a range of topics. Maybe you've found one and can give us a brief review. Diptera are an obvious first choice with my focus currently being on larval stages. Habitats & conservation another area, checking the reviews and offers in British Wildlife regularly. Real prizes for me are in the following subject:

Biogeography

Had University courses in Biogeography been available back in the 80s I'd have made a bee-line for that subject. Nowadays you'll find them at Manchester, Leeds etc.; at a guess they'll be using Huggett as their course book. Ideally though USA would have been the place to study, chances are that you'd have had the opportunity to be lectured by E.O.Wilson or more recently by the authors of this book.

Following my delight at Mark Lomolino's *Biogeography: A very short introduction* which I reviewed in the last Bulletin I began looking for the prize tome in this subject area by the same author. Disheartened at the £159 price of the new book I kept looking and a second-hand one turned up - I got the last cheaper one at the time but you might get lucky.

Biogeography (5th edition)
Mark V. Lomolino, Brett R. Riddle, Robert J. Whittaker (2016)
£53 (hardback) second hand
Oxford University Press (www.oup.com/uk/vsi)



This really is a good read. A few score pages in and I've run out of bookmarks and half-read novels lie neglected around the house. Worth every penny, there are frequent revelations and tons of interest. Unsurprising since effectively what I'm doing is studying the best part of an entire University course as presented by the top experts in the field.

Since it's a course book, it's divided into study units as follows:

1. Introduction
2. The Geographic & Ecological Foundations of Biogeography
3. Biogeographic processes & Earth history
4. Evolutionary History of Lineages & Biotas
5. Ecological Biogeography
6. Conservation and the frontiers of Biogeography

Within those units are chapters on topics in which readers may be more familiar. These include some nice accounts of historic explorers, early maps and theories, a set of chapters on biogeography processes and Earth history, three chapters on evolutionary history of lineages and biotas, and chapters that address the fundamentals of ecological biogeography. It concludes with two chapters on conservation biogeography, the geography of humanity, and future frontiers of the discipline. All fabulously illustrated throughout.

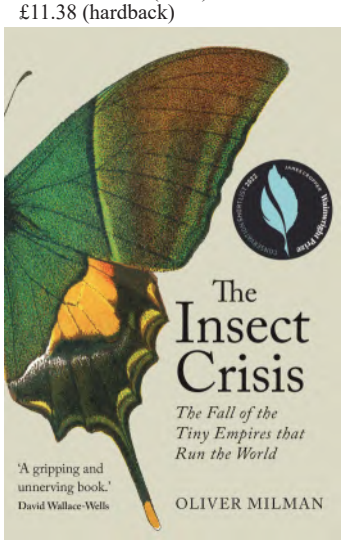
You could pick your way through via the topics that interest you most, such as Island Biogeography, Speciation, Continental Drift or Geologic Timescales but I'm making my way slowly through the whole book first. How nice to sit in the sun gaining revelations and pondering the significance of each topic in respect of Diptera ecology & evolution etc.. Raises the "advancement of distribution" and other Dipterists Forum objectives to a whole new contextual level.

Darwyn Sumner

Biodiversity

The Insect Crisis: The Fall of the Tiny Empires that Run the World

Oliver Milman (2022)
£11.38 (hardback)



Broadly speaking this covers the same subject area as Dave Goulson's Silent Earth (Bulletin 92.) Both good writers of course, Milman's approach is more journalistic in style and thus picks up on more popular areas of the media. For example bees feature strongly in this book.

Milman ties the crisis nicely to current political ineptitude, ignorance and indolence and thence to the unravelling of ecosystems which will seal the fate of mankind.

Darwyn Sumner

Diptera: Soldierflies

Review – a new field guide for soldierflies and allies

Zeegers, T., and Schulten, A. 2022. Field guide to flies with three pulvilli – Families of Homeodactyla of Northwest Europe. Stichting Jeugdbondsuitgeverij, Graveland. ISBN: 9789051070682. **Translation: van Wouwen, N**. 256 pages.

Review by Martin Harvey

What are flies with three pulvilli? "Pulvilli" are the pad-like structures that can be seen under the claws of many flies, at the end of the tarsi. Most flies have two pulvilli, but a set of related families within the soldierflies and allies are distinctive in having three pulvilli, and in recent taxonomy have been given the name Homeodactyla. So this book is a splendid new field guide to most, but not all, of the soldierflies and allies. See the table below for a more detailed list of which groups are included.

The field guide consists largely of keys and species accounts, both very well-illustrated, the former with clear graphics to show the distinguishing features at each step of the key, and the latter with high-quality photos of the species, usually showing both males and females.

The UK recording scheme for soldierflies and allies covers 11 families, of which seven are included in this field guide, the exceptions being Asilidae (robberflies), Bombyliidae (bee-flies), Scenopinidae (window-flies) and Therevidae (stiletto-flies). The book also has one species in a family that is not found in the UK, the Coenomyiidae (Odour-flies). Within the seven UK families covered, all the currently listed UK species are included in the book, with the exception of one horsefly:

Family	Coverage in book	UK species
Acroceridae - Hunchback-flies	7 species	all 4 are included
Athericidae - Water-snipeflies	3 species	all 3 are included
Coenomyiidae - Odour-flies	1 species	not in UK
Rhagionidae - Snipeflies	25 species	all 15 are included
Stratiomyidae - Soldierflies	62 species	all 49 are included
Tabanidae - Horseflies	57 species	29 of the 30 currently recognised UK species are included; the species we call "*Hybomitra ciureai*" in the UK checklist is treated in the book as a synonym of *H. solstitialis* (Meigen 1820) nec Lyneborg (1959); the species we call "*Hybomitra solstitialis*" in the UK checklist is not recognised in the book, and is treated as a variety of *H. bimaculata*.
Xylomyidae - Wood-soldierflies	3 species	all 3 are included
Xylophagidae - Awl-flies	4 species	all 3 are included

There is a long history of confusion over the naming of species in the 'bimaculata group' within genus *Hybomitra*. Theo Zeegers regards the UK concept of *Hybomitra solstitialis* (Scarce Forest Horsefly) as a variety of *Hybomitra bimaculata*, and also proposes that the UK concept of *Hybomitra ciureai* (Levels Yellow-horned Horsefly) should be synonymised with *H. solstitialis* (Meigen 1820) nec Lyneborg (1959) (Zeegers, Th. 2018. A new synonymy in the horsefly genus *Hybomitra* (Diptera: Tabanidae). Nederlandse Faunistische Mededelingen 50: 89–92. However, these proposals do not align with the experience of dipterists who are familiar with the species in the UK, and further work including DNA analysis is likely to be needed to fully resolve this issue. Anyone using the new field guide to key out these two *Hybomitra* species should be aware of the possibility that UK specimens may not fully match the key, and that voucher specimens should be retained where possible.

That complication aside, the new field guide is a very welcome addition to the resources available for soldierflies and allies in the UK. The keys are very clearly laid out, and in a number of cases pick up on useful identification features that are not mentioned in other UK sources, using characters that can be seen in the field or in close-up photos as far as possible, while not underestimating the challenges posed by the trickier species. The inclusion of about 37 non-UK species needs to be born in mind when using the keys, but the text makes it clear which are known from the UK. And there is always the exciting possibility that the field guide could lead to the discovery of further species that are present but overlooked in the UK.

At the time of writing, the book is on sale in the UK at £14.99 (see p21), which is exceptionally good value for such a high quality publication. The publishers are Jeugdbondsuitgeverij, who describe themselves as a group of young nature enthusiasts, mostly entomologists, who work on the publications as volunteers. Thanks to the generosity of publishers, authors and photographers in donating expertise and images for the book the price has been kept low, in the hope of encouraging as many people as possible to take an interest in these flies. From my perspective as UK recording scheme organiser this is a highly commendable approach!

I would thoroughly recommend this book to anyone who has an interest in soldierflies and allies. It works well as a stand-alone field guide for UK use, and complements the well-known Stubbs and Drake British Soldierflies book really well. Thanks to Theo Zeegers & André Schulten, and translator Nick van Wouwen, for making it so accessible to English speakers.

Members

Membership Matters

By mid-Dec 2022 we had 494 paid-up members and 416 subscribing to the Dipterists Digest. We have received new subscriptions from 50 people. The large increase since the Spring Bulletin is partly down to late subscribers paying as a result of sending out reminder notices. This is a time-consuming process however and we urge all members to pay their subs in the January-March period each year so that we can plan print runs of our journals. We send early in the year publications to all members who had subscribed the previous year as there are so many late subscribers. I am happy to answer any email queries about subscriptions if you are not sure you have paid.

Regrettably, we will have to increase subscriptions from 2024 as printing and postage costs now exceed our basic subscriptions. We are very grateful to the Biodiversity Records Centre for their continued handling of postage of our bulk mailing of the Bulletin at no cost to us but we do cover the cost of postage for late paying and new members. To offset some of the increased costs we will be offering the Bulletin in pdf form only at no increased charge from our current rates in the UK. We will also be bringing the overseas pdf Bulletin charge in line with the UK as there is no additional cost to Dipterists Forum. At present we have decided to keep the Dipterists Digest as a print-only publication. This is a peer-reviewed scientific journal containing papers on all matters Diptera in Europe. It also contains additions and changes to the UK and Ireland checklists, news of new species and often valuable identification features.

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

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Tel.: 01536 710831
E-mail: showersjohn@gmail.com

Dipterists Forum Subscription Rates 2023/4

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	2023
UK rates:		
Membership + hardcopy Bulletin	**£12** pa	£ 8
Membership + pdf Bulletin	**£8** pa	n/a
Membership + hardcopy Bulletin and Dipterists Digest	**£26** pa	£20
Membership + pdf Bulletin + hardcopy Dipterists Digest	**£22** pa	n/a
Overseas rates		
Membership + hardcopy Bulletin	**£18** pa	£14
Membership + pdf Bulletin	**£8** pa	n/a
Membership + hardcopy Bulletin and Dipterists Digest	**£30** pa	£25
Membership + pdf Bulletin + hardcopy Dipterists Digest	**£26** pa	n/a

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

At a glance - (*Ed.*)

Membership inc.	Bulletin	Dipterists Digest	2022	2023	2024	
UK	Hardcopy	No	£8	£8	**£12**	
	pdf	No	N/A	N/A	**£8**	
	Hardcopy	Yes	£20	£20	**£26**	
	pdf	Yes	N/A	N/A	**£22**	
Overseas	Hardcopy	No	£14	£14	**£18**	
	pdf	No	N/A	N/A	**£8**	
	Hardcopy	Yes	£25	£25	**£30**	
	pdf	Yes	N/A	N/A	**£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-February 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

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 offering 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 are also currently working to ensure that the News section on the opening page of our website advertises its availability promptly.

Ed

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.

Contributing

Bulletin

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

Dipterists Digest

Contact Peter Chandler

Recording Schemes

As for flies in particular, bring those to the attention of the Recording Schemes. Contact details for all 28 of them 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

Pdf files will not be emailed to subscribers

Bursaries

The Dipterists Forum holds an annual weekend course at the Preston Montford field studies centre near Shrewsbury. These courses cover selected families of flies in detail, and the 2023 course is expected to be about fungus gnats (Mycetophilidae). It will be held during February (10th to 12th).

The Forum also has annual residential summer field meetings lasting for one week. These take place at various venues around the country, and the 2023 meeting is expected to be based in Swansea, giving access to many sites in south Wales including the Gower peninsula. This meeting will be held in July. Attendees spend their days in the field collecting and observing flies, and evenings in a laboratory where they can identify their catches alongside other dipterists. Beginners are made very welcome and can gain valuable knowledge from more experienced members.

We offer a small number of bursaries for each of these events, awarded on a competitive basis. Bursaries for the Preston Montford course cover half the total cost of the course, including full-board accommodation for the two nights. Details of accommodation, meals etc. for the summer meeting are yet to be determined, but again the bursary will cover half the cost of the whole week. 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, Howard Bentley, jhowardbentley@gmail.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, but applications from previous recipients are welcome. 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, 18th November 2022 for the Preston Montford course and Friday, 17th February for the summer field meeting.

Howard Bentley

Meetings

Reports

Regional Groups

Northants Diptera Group

Following the last report in the Autumn Bulletin, I received a note from Martin Drake querying my record of *Dolichopus signifer* as this species is almost entirely confined to coastal sites. I double checked the specimen using the key I had originally used – one to *Dolichopus* males with yellow femora and pale lower postocular cilia – and it came out again to this species. I then double checked it against Fonseca's handbook and it keyed out to *D. griseipennis*. Clearly there is an error in the former key, which Martin and I will try to resolve.

A few more field meetings were held with no real surprises found. We have agreed that in 2023 we will hold a couple of joint meetings with the Bedfordshire Invertebrate Group to enable some exchange of skills and to cover a couple of large sites. One site is a proposed new nature reserve on abandoned farmland in Bedfordshire, but close to the Northants border, and the other will be part of Yardley Chase in Northants. A winter workshop for the Northants Group will be held to help with identification issues.

During the Spring and Summer a number of flight interception traps were set in Yardley Chase. These were sited in ancient trees in order to catch saproxylic species, especially beetles. However there was a reasonable by-catch of Diptera and I am currently working through these. Interesting species found so far are the saproxylic hoverflies *Brachyopa bicolor* and *Volucella inflata*, the conopid *Myopa pellucida* (=*extricata*) and the Rhagionid *Ptiolina obscura*. The conopid is a county first and the *Brachyopa* and *Ptiolina* are only the second records for the county.

John Showers

Summer Field Meeting 2022

East Anglia

2nd to 9th July 2022

The main iRecord Activity has achieved ~3.5k records and the 112 iNaturalistUK records are now 50% confirmed.

Records deadline is the end of March 2023 with NBN Atlas upload as Open Data then scheduled to occur in time for the Autumn Bulletin when a full report will be issued.

Same deadline for our earlier Spring meeting (Oxford Fens)

Darwyn & Jane

Dipterists Forum stand at the AES show in October. Chris Raper demonstrating

Devon Fly Group

The Devon Fly Group started the year with our eagerly anticipated indoor meeting at Woodah Farm near Doddiscombsleigh thanks to the kindness of the Devon Wildlife Trust. A healthy number turned up to listen to a range of discussions on techniques, fieldwork, gadgets, photographs and a few specialist talks. The talks covered species found in Arum flowers, *Leucophora sponsa* (Anthomyiidae) at a riverbank bee colony andcranefly genitalia involving a large cardboard cut out to demonstrate the moving parts! Prior to discussing venues for the year ahead, the annual Fly Bingo was held using photos of interesting species from the past year with prizes handed out including the usual squashed fly biscuits (Garibaldi).

The first field meeting of the year was deep down in South Devon at Warfleet at the mouth of the River Dart in April. Geoff Foale knows this place well and led us on a route out to Compass Cove via Gallants Bower before returning via the coastal path to visit Sugary Cove Beach after the tide had receded. This took us through bluebell-filled coastal woodlands, an old English Civil War fort, coastal pasture and a small wrack-rich beach below cliffs. An ice cream from the café by Dartmouth Castle rounded things off perfectly. Despite the season being in its infancy, we recorded an impressive 114 species of Diptera, along with other orders! Naturally, the many *Bombylius major* were a pleasure to see. Interest in smaller flies by a couple of members produced five species of Psychodidae, *Pericoma nubila, P. trivialis, Psychoda albipennis, P. phalaenoides* and *Tonnoiriella pulchra* along with eleven species of Sphaeroceridae such as *Thoracochaeta johnsoni* and *T. zosterae* from the beach.

Our May meeting was at Great Torrington Commons in northern Devon.

These commons encircle the town, the River Torridge to one side bordered by mature native woodland and flower-rich meadows. This is good fly hunting country made all the better by having an excellent café, the Puffing Billy, where we started and ended our day. Amongst our catch were two interesting scathophagids, Conisternum decipiens and Spaziphora hydromyzina, the latter just downstream from a sewage outfall – the fly is often associated with sewage beds. Also, along the river edge we swept several Atherix ibis, always a pleasing fly to encounter. The fern-rich woodlands produced the anthomyiid Chirosia histricina for which there are few records in Devon, whilst we found the tachinid Policheta unicolor in the meadows. The status of this fly needs revising from Vulnerable since we are finding it quite frequently in the county.

Two meetings were held in June, one at Killerton near Exeter and the other on the South Hooe peninsula near Plymouth. Some farmland at Killerton is being transformed away from intensive farming to more wildlife friendly uses including flood management. The project is only a year or so old, our visit was designed to get an idea of what was there at the start with the intention of returning a few times over the years. The route we decided upon after checking the maps was through the lowland fields alongside the River Culm from Ellerhayes Bridge to Columbjohn Church where we paused for lunch before returning the other side of the river through more fields, a plantation and the aforementioned scrapes which were dry unfortunately. After everyone had identified their samples, we had recorded no less than two hundred and thirteen species of fly! The ones worth a mention were *Ptiolina obscura* (Rhagionidae), *Argyra atriceps* (Dolichopodidae), *Gymnopternus celer* (Dolichopodidae), *Hoplolabis areolata* (Limoniidae) and *Palloptera trimacula* (Pallopteridae).

The South Hooe peninsula is a piece of saltmarsh and pasture protected by a raised seawall jutting out into the River Tamar with Cornwall on the opposite bank. Work is underway to breach the seawall and restore the pasture to tidal saltmarsh. A good number of us turned up and unintentionally broke into two groups, with one taking the seawall route to explore saltmarsh and tidal reedbeds whilst the other investigated the pasture. When the two met up again for lunch, wildflower meadows, grassland and young mixed woodland were the habitats taken in on the way back to our starting point. Altogether, our efforts resulted in a hundred and eighty-three species of Diptera being recorded. There was a wide range of species any dipterist would be glad to see or discover and the pick of the bunch were Ceroxys urticae (Uliidae), Platycheirus immarginatus (Syrphidae), Fannia vesparia (Fanniidae), Sapromyza albiceps (Lauxaniidae), Psilopa leucostoma (Ephydridae), Hilara platyura (Empididae), Dolichopus strigipes, Thinophilus ruficornis, Argyra vestita, Hercostomus chetifer and H. nanus (Dolichopodidae). The cherry on the cake was a single female Ectophasia crassipennis casually swept at the end of the day by Rob Wolton. This tachinid has been spreading across the South Devon coast very rapidly in the last few years since being first found in East Devon.

Home Farm Marsh

The warm weather had turned into a full-blown heatwave by the time of our first July field meeting at Home Farm Marsh on the banks of the Taw Estuary just west of Barnstaple. Steve Skirth from The Gaia Trust met us to guide us around the reserve as well as to learn something from us. It was an enjoyable meeting taking in coastal grazing pasture, scrapes, narrow saltmarsh edges, ditches (dry), a grassy seawall and a small pocket of woodland. The group did just get as far as the end of the reserve but the heat had become too much to bear forcing us to call it a day early. A couple of us did however have a quick sweep about a piece of the adjacent Isley Marsh, an RSPB reserve, before leaving. The combined total recorded by us came to two hundred and twenty-three species! As always, it would be too much to list all the goodies so sticking to flies with interesting status designations, there were *Dolichopus virgultorum, D. strigipes, Sciapus laetus, S. longulus, Thrypticus nigricauda & Aphrosylus mitis* (Dolichopodidae), *Villeneuvia aestuum* (Muscidae), *Sapromyza albiceps* (Lauxaniidae), *Pherbellia dorsata, Tetanocera punctifrons* (Sciomyzidae), *Haematopota subcylindrica, Tabanus sudeticus* (Tabanidae), *Herina palustris* (Ulidiidae), and *Dasydorylas horridus* (Pipunculidae).

A second July meeting was hastily arranged on a midweek day for the Grand Western Canal at Halberton. This canal is an impressive example of engineering in that it runs for just over eleven miles without any locks at all. It was intended to join up with the Taunton & Bridgwater Canal but the advent of trains put paid to that (thankfully). The towpath bank is mainly rich mixed aquatic vegetation whilst the far bank is often dominated by mature trees. Just four of us turned up which worked well as it was a very linear route along the Swan's Neck Circuit. Gaps are cut out at regular intervals in the towpath vegetation for anglers and these were swept alternatively in turns by two of us to minimise coverage of the same ground. Cool ice creams/lollies at the Halberton farm shop near the end of the walk were really appreciated as the heat was intense. A short dally along a cool shaded section of the canal boosted the catch before we called it a day, early again. Between two members there were three hundred records of Diptera with very little duplication as this involved 158 species! I think this shows how

good a continuous ribbon of half-decent habitat can be despite running through bleak farmland for most of it. Highlights from the records generated were *Microphor anomalus* (Dolichopodidae), *Pseudolyciella stylata* (Lauxaniidae), *Camarota curvipennis* (Chloropidae), *Leptopeza flavipes, Platypalpus flavicornis, P. niger* (Hybotidae), *Homoneura mediospinosa* (Lauxaniidae) and *Heleodromia immaculata* (Brachystomatidae).

The heatwave and drought continued fiercely into August but we had two fascinating field meetings, at Coombeshead and Meeth Quarry. Coombeshead is a large-scale rewilding project near Broadwoodwidger in West Devon. The well-known author and reintroduction expert Derek Gow owns this farm and decided to change his intensive farming practice into a wildlife friendlier direction. During our visit we came across an assortment of unusual farm animals such as Water Buffalo as well as breeding pens for White Storks and Wildcats for reintroduction projects. An initial pond had been dug out below a seepage and beavers introduced. These have created a lush habitat of dams, channels, grassy tussocks, muddy ground and small pools running downhill through a young woodland strip to a stream. The impact of the beavers did not stop here but carried on downstream and on to neighbouring land. With the heat drying out grassland and wildflower meadows, the contrast provided by the damp habitat engineered by the beavers was stark. As of late, the heat forced us to call it a day early but we have promised a return visit at an earlier time next year or so. Sampling a large pony dung deposit under the cool shade of some trees produced fifteen species of Sphaeroceridae including *Borborillus uncinatus*. Richard Lane's interest in the tiny stuff turned up six species of Psychodidae and the same number of Ceratopogonidae! Out of the Dolichopodidae recorded the highlights were *Diaphorus oculatus, Dolichopus phaeopus, D. vitripennis, Syntormon submonilis* and *Teuchophorus spinigerellus*. A hybotid we don't hear about very often was *Drapetis ephippiata*. Two species of Pallopteridae were found including Palloptera trimacula and P. umbellatarum. Sarcophagidae were represented by six species with two being *Brachicoma devia* and *Nyctia halterata*. No less than twenty-seven species of Syrphidae were clocked with *Trichopsomyia flavitarsis* being the only one worthy of a mention. I am sure we would have got far more good stuff in cooler conditions.

Meeth Quarry is a former opencast ball clay quarry handed over to the Devon Wildlife Trust to be managed as a wildlife reserve.

The pits have since filled up to become lakes and trees have been allowed to grow back to create a wonderful spot. With the site being so large, we decided to split up to ensure we covered the place well before meeting up again for lunch at a designated picnic spot next to a totem pole! Habitats covered varied from heathland, young woodland, lake edges, marshy woodland rides, pony dung deposits and a stream plus more. Our efforts resulted in valuable records of 218 species from forty-two families of Diptera along with other orders. The best represented families in terms of species recorded in ascending order were Ephydridae (13 species), Sciomyzidae (13 species), Muscidae (15 species), Sphaeroceridae (19 species), Dolichopodidae (25 species) and Syrphidae (33 species). You should notice the surprise there. A large carpet of pony dung deposits under the shade of a few trees as well as a hand vacuum (plus sweep netting) was responsible for the nineteen species of lesser dungfly! These included a single male *Philocoprella quadrispina* and a few *Lotobia pallidiventris* (both classed as Data Deficient), previously with no records in our database. The thirteen species of Sciomyzidae was also impressive with the gems being *Ilione lineata, Pherbellia dorsata and Sepedon spinipes*.

In 2021 we enjoyed a visit to Whiterocks Down & Molland Common on the Devon parts of Exmoor enough to return in 2022 albeit a bit later in the year in the hope of adding seasonally different species to the dataset. Once again, it did not disappoint as we recorded a fine range of flies. The hot weather and drought had dried up the place somewhat so even the river (Dane's Brook) at the bottom of the steep-sided woodland valley (Whiterocks) did not offer up the craneflies and fungus gnats galore we anticipated. However, the combination of the grasslands, wooded valley, river as well as the wet and dry moorland habitats saw us record 125 species of Diptera which is pretty good considering the talk of hosepipe bans! There was an element of autumn coming into the fly records with four species of Heleomyzidae, *Suillia affinis, S. bicolor, S. notata* and *S. humilis* along with twenty-three species of 'cranefly' with the one worth a mention being *Dicranota exclusa*. The star find of the day though was a small Lauxaniid, *Pseudolyciella pallidiventris* from Whiterocks Down, this fly having a Red Data Book designation.

Two field meetings were held in October with the first being an afternoon session at the strangely named Prickly Pear Wood near Ottery St Mary. This was a small dry woodland site with no running water (and no cacti) so it was surprising to see plenty of fungi all over the site despite being slow to show elsewhere in Devon. Five of us turned up including one new member. Just fifty-four species of Diptera were logged under less-than-ideal weather. In fact, the sun came out in force when we were leaving.

The final field meeting of our year was at Andrew's Wood near Loddiswell in the South Hams. There were several rain showers through the day which made for soggy sweep nets whilst we ventured through pasture, heathland, woodland, streams and a dried-up overgrown pond. A few weeks before, Hornet Robberflies had still been around in numbers but not today with just a single female found by Richard Lane. There was still a good selection of flies on offer in between the showers with our efforts culminating in 136 species of Diptera of forty families. The ones worthy of a mention were *Chirosia betuleti* (Anthomyiidae), *Rhaphium albomaculatum* (Dolichopodidae), *Scatella lutosa* (Ephydridae), *Erioconopa diuturna* (Limoniidae), *Boreoclytocerus ocellaris* & *Threticus lucifugus* (Psychodidae), *Conisternum decipiens* (Scathophagidae) and *Alloborborus pallifrons* (Sphaeroceridae).

Andrews Wood, October

Next August, it will be ten years since the Devon Fly Group was formed, at the Woodland Centre in Yarner Wood, so something special is on our minds to celebrate that landmark. As always, anyone is welcome to join the group simply by way of signing up to our newsgroup. If you are on holiday or whatever in Devon you are most welcome to join one of our field meetings too.

Andrew Cunningham

11th International Symposium on Syrphidae

Barcelonnette, France

5-9 September 2022

When I started my research work on hoverflies, more than a few years ago, I cannot remember knowing anybody else who thought hoverflies a subject worth study. So it is a delight now to attend the regular conference that brings together so many enthusiasts from different countries.

The 11th International Symposium on Syrphidae took place in a very pleasant conference centre in the French Alps in September 2022. Intended to be a biennial meeting, the 11th symposium was delayed a year by the pandemic.

The meeting was organised by Gabriel Neve and his team at IMBE (Mediterranean Institute of Biodiversity and Ecology) with support from the Aix-Marseille University in Marseille. However, owing to the difficulty of booking university facilities, the symposium was held at the Seolane Centre in Barcelonnette.

For some this meant catching the early Eurostar to Paris, a swift connection to the TGV for Marseille, and then meeting up there with those of us who had already boarded the coach for a 3 hour trip up into the Alps.

The symposium continues to attract researchers from all over the globe, with visitors from Colombia, Brazil, South Africa, Canada and Australia, although the majority were European, and this time several speakers were from the UK. Roger Morris and Stuart Ball made several contributions on the day that dealt with monitoring, conservation and phenology. Several lines of evidence show how recording schemes can provide the details of where the distributions of some syrphids are now drifting in line with climate change.

However, we had other reminders that science does not exist in an ivory tower. The plenary talk to open the symposium was cancelled because the French government would not grant a visa to Babak Gharali from Iran. And the most poignant session was when the paper on a checklist of the Syrphidae of Ukraine was delivered in a video sent to us by Grigory Popov from Kyiv.

A total of 85 names were listed in the programme, which also listed 31 posters on display. One or two regulars were missing for other reasons, but the teams in Novi Sad (Serbia) and Alicante (Spain) continue to send large contingents, and an increasing number came from the Czech Republic, who were persuaded to host the 2024 symposium.

The sessions were divided into topics. Much of the first day was on phylogeny, systematics and taxonomy, often including DNA sequence research. Day 2 was for monitoring and conservation, with faunistics and biogeography on Day 3. Ecological papers were sprinkled throughout.

The final day was a coach trip up to the Mercantour National Park on the Italian border. In fact, many of us stepped into Italy to buy a coffee! Hoverflies were not present in great abundance, but the scenery made up for any entomological disappointments. On arrival some of the local marmots came out of their burrows to inspect us.

In fact the best spot we found for entomology was at the front of the Seolane Centre where rather neglected flower beds had some interesting hymenoptera. Paper wasps (probably *Polistes dominula*) were always around and large black Xylocopa were striking visitors

Some of the most surprising research was on insect migration and particularly the migration of syrphids through mountain passes. The idea that female *Episyrphus balteatus* may fly through the Pyrenees, while using the sun for navigation, was remarkable.

Will Hawkes (Exeter) presented results for Autumn migrations in 2018-21 through the Puerto de Bujaruelo mountain pass, where David and Elizabeth Lack had come to watch bird migration in the 1950s but then saw migrating insects as well. Hoverflies make up a large percentage of the many millions of insects estimated to travel through the pass each autumn.

Results from the Czech Republic were presented by Antonin Hlavacek (Prague) and an overview of this little understood topic came from Myles Menz (now at James Cook University

in Australia). It was not clear whether we should predict migrants to be mostly males or mostly females, or in equal numbers. Where estimates of migrant numbers are available from earlier studies, as in the Swiss Alps, numbers now seem to be lower than in the earliest records.

At the moment, all minds should be focussed on what recording data indicate about climate change. There are little things, evidence that UK species such as *Leucozona glaucia* are being recorded more in the north and less often in the south, suggesting a range shift. *Epistrophe eligans* seems to be emerging 3 weeks earlier than in 1980. However, for endemic species of the Paramos (tropical alpine) ecosystems described by Augusto Montoya (Antioquia, Colombia) a range shift upwards driven by a warming climate eventually can only lead to absence of habitat (literally so!) and extinction.

My own contribution on two species in my favourite genus of Eristalis was an unexpected outcome of the pandemic. Forced to spend lockdown at home, and given several weeks of fine weather to watch insects in my own garden, I collected many hours of observations on the behaviours of *Eristalis tenax* and *E. pertinax*, which solved some of the issues that puzzled me when I did my Ph.D. several years ago.

As a student I had just got up too late to discover what male *E. tenax* were doing. They become active early and searched for females as soon as direct summer sunshine reached my garden, but switched to foraging in the afternoon. My conclusion about *E. pertinax* males was that most statements about their hovering can be refuted by patient observation.

Many thanks to Gabriel Neve, whose role was made even more demanding by the pandemic. The successful outcome was a tribute to the determination of the organising team. We were greatly in debt to Camille Ruel at IMBE, who had to deal with our bookings via a website that crashed at the slightest problem.

The 2024 symposium is to be held in the Czech Republic, and we wish the organisers well in delivering another outstanding event. British enthusiasts should remember that not only are all presentations in English, but most discussion in the breaks is also in English. I will post details in the Hoverfly newsletter when available.

Jon Heal

Annual Meeting

19th November 2022

The Natural History Museum

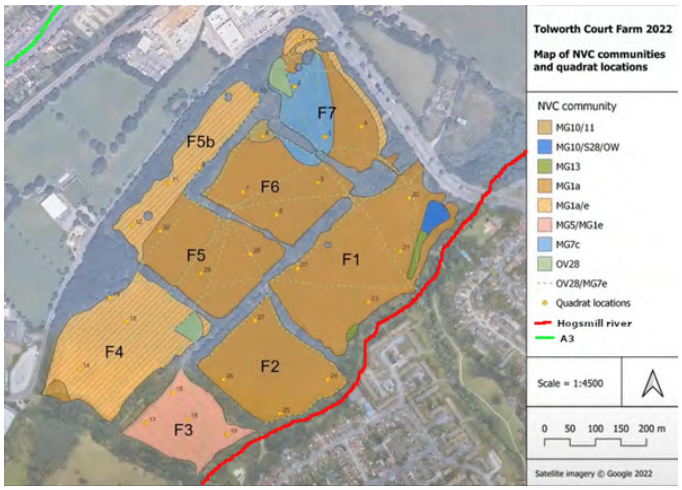
Zoe Adams arranged a number of speakers for our Annual Meeting. These were simultaneously accessible via Zoom for those unable to attend in person. Consequently the talks were recorded and are now available on our youtube channel. Two of them were also written up for the Bulletin below, many thanks to them both for taking the trouble to do that (Ed.)

Citizen Zoo – Tolworth Court Farm, a peri-urban rewilding project

A video of Elliot Newton's talk is available at www.youtube.com/@DipteristsForum

Below is a summary of the talk from **Zoe Adams**.

There are perks attached to being DF indoor meetings secretary, a big one being you can choose talks for the annual Dipterists Day. This year I invited along Elliot Newton, my local borough Biodiversity Officer for Kingston upon Thames, to talk about an exciting re-wilding project at the Tolworth Court Farm (TCF) site. Tolworth Court Farm has a very long history, with a stretch of the original Roman road to London running through its centre it can be dated back to the Domesday book of 1086. The layout of the site can be seen below, the fields are mostly unexciting MG1 mesotrophic grassland, but the network of hedgerows are ancient, supporting a healthy population of brown Hairstreak butterflies. Along its southern boundary, the border between greater London and Surrey, flows the Hogsmill river, one of our globally scarce chalk streams. Giving the site something of a green corridor connecting it to the wider environment.



At just 43 hectares TCF, though the largest nature reserve in the borough, is a very small site on which to attempt re-wilding. The project team also think it may well be the UK's first attempt at re-wilding in an urban/peri-urban setting. No doubt this will bring some interesting additional challenges, to quote Elliot, "how do you reintroduce wild pigs, to London, without having your pigs stolen"?

DF bulletin readers are doubtless familiar with the term "re-wilding", but as Elliot points out it is a concept that has grown many arms and many legs, since it was first coined back in 1992 by a group of US conservation biologists led by Dave Forman, so, what will re-wilding look like in the context of TCF:

1) Embracing ecosystem processes and species analogues
2) Maximising the sites ecological potential
3) Rewilding people
4) Ecological monitoring

Elliot also highlighted that experience has shown him, if you include the idea of re-wilding, when discussing conservation projects with local government bodies, funding agencies, & local community groups, it elicits much greater levels of engagement & excitement. Often generating an air of optimistic enthusiasm around a project, making it a powerful concept in your planning and engagement toolkit.

Anyone interested in finding out more about the site, its history, and the work that has taken place so far, including details of environmental monitoring, public engagement activities, and planned improvements to the site, can watch the video of Elliot's talk on the Forum's YouTube channel (weblink at the top of this piece).

Diptera survey: Baseline inventory

To support this pioneering re-wilding project, I am hoping to co-ordinate a top-notch survey of the Diptera on the site, which will hopefully give the project another first, and make it the UKs only re-wilding site to have such a comprehensive baseline survey of its Diptera before the re-wilding work begins in earnest. After all, Diptera have their fingers in so many different ecological pies, who knows what interesting details they may reveal about the re-wild process, if we look closely. My plan for the survey is to trap on the site during 2023 and hope we can get as much of the material as possible identified by employing the process laid out by Art Borkent & Brian Brown in their 2015 Zootaxa paper (Borkent & Brown 2015). The first part of the process is to engage some group experts willing to identify material, secondly to recruit technical support to process the material so that your group experts only receive the material they want to look at, in the format they prefer, then you go and get your flies. The Peoples Trust for Endangered species runs an internship programme to which we will apply to secure technical support, and I hope some kind Dipterists Forum member will be interested in looking at different families of flies for the project. Anyone interested in getting involved please do get in touch (z.adams@nhm.ac.uk), and we will see how far we can go towards an all-taxa list for the Diptera!

Zoe Adams

References

Citizen Zoo www.citizenzoo.org

Tolworth Court Farm https://tinyurl.com/48rbuwcj

Chalk streams: why '~~England's rainforests~~' are so rare and precious https://tinyurl.com/69ysks9d

Amusing terminological inexactitude in the title to this piece; as Guy Shrubsole points out, England's Rainforests are England's Rainforests, Chalk Streams are something else, they're England's Chalk Streams - good boots for one, wellies for the other (Ed)

Borkent, A. & Brown, B. 2015. Zootaxa 3949 (3): 301-322. How to inventory tropical flies (Diptera) – One of the megadiverse orders of insects. http://dx.doi.org/10.11646/zootaxa.3949.3.1

Biological Responses to Global Change in Hoverflies

A video of Prof Christopher Hassall's talk is available at www.youtube.com/@DipteristsForum

Below is a summary of the talk from **Phil Brighton.**

Chris Hassall (University of Leeds) has been using recording scheme data for a large range of vertebrate and invertebrate groups to study shifts in range and phenology in response to climate change over the period 1960 to 1999. There is wide variation in how the different groups respond. Vertebrates show rather small and inconsistent responses, perhaps because of limitations on how easily they can move to new patches of suitable habitats. In contrast, many invertebrate groups, including the Syrphidae, show the strongest and most consistent responses. The diptera had the strongest response in terms of first emergence dates, though the median and latest dates showed little change. This indicates that the Syrphidae are particularly resilient to climate change, in some cases out-pacing it (see Ref 1).

Jennifer Owen's 30-year sequence of observations of a wide range of invertebrates in a Leicestershire garden is an immensely valuable dataset (Ref 2). The phenological response was somewhat different from the Recording Scheme data showing advances in the peak and latest dates of appearance as well as in the earliest. Chris has also unearthed a lot of laboratory data on the development rates of larvae which together with voltinism explain differing responses of individual species. The paper presenting this work was dedicated to the memory of Jennifer Owen, who sadly died shortly before its publication (Ref 3).

Finally Chris discussed some as yet unpublished work on the potential interactions with Batesian mimicry, in which hoverfly species derive protection from predators by resembling unpleasant or distasteful hymenoptera. For this to work relies on the phenology of the mimics lagging behind that of the models. If climate change results in the mimics appearing first, the predators would not have learned to avoid them. Chris also argued that the greater species-richness of mimics in the south complicates decision-making for the predators, so that the models suffer and the mimics benefit as a result. Thus climate change produces a dynamic temporal and spatial landscape for evolution.

1.Hassall, C. 2015. Odonata as candidate macroecological barometers for global climate change. Freshwater Science 34, 1040-1049.

2.Hassall, C., Owen J. & Gilbert, F. 2017. Phenological shifts in hoverflies (Diptera: Syrphidae): linking measurement and mechanism. Ecography 40, 853-863.

3.Owen, J. 2010. Wildlife of a garden: a thirty-year study. Royal Horticultural Society.

Palaearctic/Neotropical Diptera in Kashmir

Suhaib Yatoo: Imperial College and NHM MSc. Student: Diptera of Kashmir

Suhaib is from Kashmir and has always had a strong interest in natural history, studying various taxonomic groups around his village. In 2020 he won the Young Naturalist Award from the Sanctuary Nature Foundation in India and was commended for his "unending curiosity for the scientific workings of the natural world". His studies of fungi led to his discovery of fungus gnats and a new species of Keroplatus, which was also the first record of the genus in India. He was hooked! More recently he was awarded a scholarship by the Inlaks Foundation to study for an MSc. at Imperial College and the NHM. He started in September 2022 and Zoe, our Indoor Meetings organiser, was quick off the mark to book him to give this talk at the 2022 AGM.

Suhaib told us that Kashmir does not enjoy good links with the rest of the world. The territorial dispute between India, Pakistan and China hinders movement and the state recently had a 7-month internet lockdown. The Biodiversity Act passed in 2002 makes it difficult for foreign researchers to visit and study and the removal of specimens out of Kashmir is also restricted. This is Subhaib's first visit to the UK. One can only wonder what he must be feeling to be able to work with the combined resources of Imperial College and the NHM and be able to communicate with Dipterists all over the world.

Kashmir straddles the line dividing the Palaearctic and the Neotropical regions. To the north of his village towards the foothills of the Himalayas Suhaib finds Palaearctic species and to the south Neotropical species, but he told us that the actual distribution of taxa is more complex. For the taxonomist this means that a knowledge of, and access to, the literature and museum collections of both regions is required. Determination of species can take a long time.

Suhaib then illustrated some of these issues by telling us about some of the work he is now doing. Only 5 species from the Stratiomyidae have previously been reported from the whole of Kashmir. Yet within a 1km radius of his house he has found 8 species of which at least one is new.

The Syrphidae, with an Indian fauna of 169 species in 55 genera are poorly known, with many of the smaller species barely reported. A description of a new species of *Spilomyia* is currently in press. Suhaib's main focus at the moment though is the Asilidae. In the genus *Machimus* he is working on 3 undescribed species and in *Stenopogan*, of which only 19 species are known from India, he is adding two new species to the fauna. A specimen of *Trichomachimus omani* Parui & Joseph took over one month to identify as Suhaib had to search through both the Palaearctic and Neotropical fauna. In the Pseudopomyzidae he recently added *Tenuia smirnovi* Shatalkin to the fauna – the first record of the family from the whole of India.

During his talk Suhaib used the expression "just scratching the surface" to describe the amount of work being done on the Diptera fauna of Kashmir. As well as doing his own work, Suhaib is working with young students to encourage their interest in studying the natural world and he is also keen to develop Citizen Science projects that collect data on the flora and fauna of Kashmir.

More information on Suhaib's work can be found on Facebook, YouTube and ResearchGate. Two papers that cover some of his work mentioned in his talk are;

Yatoo S. F. et al 2022, Pseudopomyzidae—A Family of Diptera new to the Indian Fauna, Zootaxa 5124 (1): 095–100.

Yatoo, S. F. et al, A conspectus of the picture-winged flies (Diptera: Ulidiidae) of India, Entomologist's Monthly Magazine 157(4): 285-291.

Malcolm Jennings

Workshop

20th November 2022

Genitalia dissection workshop

A workshop on dissection techniques was held in the Angela Marmont Centre on Sunday 20th November.

by **Jenni Wilding**

Several of us (8) gathered at the Angela Marmont Centre at the NHM on Sunday, the day after the AGM for a Genitalia Workshop run by John Kramer and Zoe Adams. The format was a mixture of illustrated explanation and practical workshop.

For some flies, the genitalia can be examined without the need for any chemical preparation by teasing them out with a micropin which can be mounted in a suitable stick such as a thin piece of dowelling or a matchstick; a small hook on the end of the pin is useful for this.

If the genitalia do need to be chemically prepared there are different ways of making sure they are presented for examination such as slide mounting, or using glycerine jelly to hold dissections for photography.

As a beginner at genitalia preparation I decided to concentrate on the basics of preparation and examination of a medium sized cranefly specimen I had brought with me - *Tipula confusa*.

We were shown a range of equipment, including indented glass blocks (*embryo dishes - Ed.*), fine-pointed forceps, scalpel, pipettes and some very useful small surgical scissors.

The first step was to cut off the end of the abdomen of the cranefly, making sure that there was enough length to be able to hold it with the forceps. This was then placed into a small amount of potassium hydroxide (10% KOH) in one of the glass blocks. I could observe the end of the abdomen becoming more translucent, and when I judged that I would be able to see the genitalia structures, transferred it to another indented glass block of deionised water to rinse it. At this stage, there is also an option to neutralise the KOH with 5% Acetic Acid. One of my concerns before having a go at this was the use of such a caustic substance as KOH, but the amounts used are very small. Sensible precautions should of course be taken as you don't want to get this substance in your eyes, on your skin, or on your clothes. One useful tip is to label your glass blocks so that you don't get your clear liquids mixed up!

My other worry; that putting the abdomen in KOH would result in the whole thing falling apart, leaving me with a confusing genitalia jigsaw puzzle, thankfully that did not happen, and I was able to transfer the rinsed abdomen into a third indented glass block containing glycerine for examination under the microscope. It was easy to see the structures and compare them with the images in the key. For storage purposes, the end of the abdomen can then be placed in a microvial of glycerine, which can then be pinned beneath the specimen.

I found this to be a really good introduction to genitalia preparation; the opportunity to have a go, with experts such as John and Zoe available to answer questions, made it a very useful session.

Annual General Meeting

Saturday 19th November 2022

Natural History Museum

Agenda

1. Apologies

Received from Erica McAlister, Rob Wolton, Peter Chandler, Tony Irwin and Mike Bloxham

2. Chair's Report

2022 took over from 2021 with the prospects of any great improvement in global events as pessimistic as ever. However, last year I was asked (ahem) to take over the role of Chair from Rob and so for me at least there was a sense of optimism for the year ahead. If flies can't cheer folks up then nothing can!

The committee has been busy this year and I would like to thank all of them for their tireless efforts. Firstly, I would very much like to thank Rob Wolton for the amazing work on the committee and for the Forum both before and during his time as Chair. For five years, a recent record, Rob has steered the forum onwards and upwards and during his time the Forum increased in size, reach and professionalism. I am very happy to say that he has not stopped either his work with the committee, where holds the role of Vice Chair, nor his passion for Diptera conservation where he oversees our project of generating funding for a Speyside Diptera review.

I would like also to thank other committee members for their important contributions to the DF. Our Treasurer, Phil Brighton and our Membership secretary, John Showers have both carried out their duties diligently. Our accounts are healthy and our membership is growing. Zoe Adams organised a very successful online Dipterists Day last year, which I do recommend you watch on the DF YouTube channel if you have not already done so. And in celebration of the long awaited new BENHS British Craneflies book by Alan Stubbs, Zoe organised this years Spring Workshop on Craneflies with John Kramer running the course. I may be biased but I thoroughly enjoyed the weekend, learning lots and managing to add some more records from undescribed material from previous fieldtrips. Mark Welch and Judy Webb organised a very successful spring meeting in Oxfordshire, where many new attendees were among the counted. Tony Irwin and Jane Hewitt organised our summer meeting in Norfolk, where over 40 people attended, again with many new faces to match the well known ones. The DF also helped collect material for DToL on both the spring and summer meetings – from the summer meeting alone 561 specimens were frozen of which 219 were Diptera and together 288 new to the Wellcome database! A great response from all those who attended these meetings.

Mark Welch has also been keeping a close eye on all conservation matters – now more important than ever. One of the many things that he has been doing during 2021 and 2022 is working closely with Buglife to make sure DF views were represented in the QQR7 (Quinquennial Review of Schedules 5 and 8 of the Wildlife and Countryside Act). Darwyn Sumner, assisted by Judy Webb, continues to produce a very sleek-looking Bulletin that covers a wide range of Dipterological topics. A plea from me is for more contributions from members on subjects to keep this Bulletin as interesting and refreshing as it currently is.

Peter Chandler has been an exceptionally busy committee member. He continues as editor for the Digest and thanks to many of the members receives sufficient varied content to produce a stimulating read. A highlight this year was a supplement written by Peter on the Diptera of Great Windsor Park – a comprehensive account drawn from the wealth of information that has been produced on the subject. Peter has also published his RES Handbook, Volume 9, Part 8: Fungus Gnats (Diptera: Mycetophilidae, Mycetophilinae) – an excellent key that hopefully many of us will get the chance to go through with him as he is running the 2023 Spring Workshop at Preston Montford.

Martin Harvey has done a sterling job in maintaining the website and continues to keep it up to date with publications, news of DF events and recording schemes. Thanks also go to all who add content – images, news, reviews and so much more. The role of publicity officer is currently vacant although I am still acting as this for the moment. Marc Taylor stood down as Training Coordinator but has kindly agreed to stay on as a committee member.

Two members of the committee are not standing for re-election. Matt Harrow has been on the committee since 2019, first as Training Coordinator then as an ordinary committee member. He is not standing for re-election this year due to other commitments. We thank him for his contributions to the DF and very much hope that he will re-join the committee in the future when he has time to be more involved.

Malcolm Smart first joined the committee in 1998. Since then he has served almost continuously, taking on many of the officer posts including Field Meetings Secretary (1999 -2001), Conservation Officer (2004), Chairman (2005-2006), Vice Chairman (2007-2008), and then Indoor Meetings Secretary (2009-2012). Since 2013 he has remained on the committee as an ordinary member, where his knowledge of DF constitutional matters has been very helpful. Malcolm helped the DF in many other ways, including taking over the organisation of the 2018 Summer Field meeting in Stoke on Trent at relatively short notice. I am sure that many DF members have fond memories of Malcolm on field trips, with his extraordinary collecting net and his predilection for falling into ditches. For several years, Malcolm organised the DF stand at the Staffordshire Invertebrate Fair, ensuring we were prominently placed and bringing along a splendid selection of his tropical Diptera specimens to wow visitors. On behalf of the DF, I would like to thank Malcolm for the enormous number of contributions he has made to the running of our society.

And finally, I would very much like to personally thank Jane Hewitt for all her work over the last year. Not only has she been there to guide me through the protocols and procedures, but she has also kept excellent records of Dipterists Forum meetings.

Next year looks like another challenging year but do not despair, as there are many bright dipterological things to keep our spirits high including both a Spring meeting to Wiltshire and a Summer meeting to South Wales!

Erica McAlister

3. Treasurer's Report

The Accounts for the year ending 31st Dec 2021 were published in Bulletin 94 (p29). Subscription income in 2021 fell back from the peak provoked by the pandemic but remains £1,200 ahead of the 2019 level. There has been no significant change overall in the amount of other income. There has again been an increase in the royalties from Britain's Hoverflies, which are so kindly donated by Roger Morris and Stuart Ball.

The summer field meeting at Falmouth, which had been postponed from 2020, was fully booked and considered a great success by participants. The Forum as usual supported the event by paying for the workroom and also provided one bursary of half the accommodation costs.

The Committee authorised publication of Peter Chandler's "Diptera of Windsor Forest" as a special Supplement to the Digest, in effect returning to members part of the surplus funds built up in the past. The total cost of the two parts (the Supplement itself and an Appendix containing the full list of records), including printing, envelopes and postage was £3022. Disregarding this "dividend" back to members, there was a small surplus in 2021 of £144. The Committee has been keeping a close eye on the costs of publications. For one thing, the availability of good quality electronic versions has enabled us to reduce the amount of extra copies printed. We have continued to use the envelope-packing service provided by the printers of the Bulletin, who then dispatch them to CEH at Wallingford for sending out. We thank the Biological Records Centre for continuing to pay for the postage. In the last year's report, the packing was included in the printing cost for No 90, but this has been transferred to "Bulletin envelopes" in the 2020 comparative figures presented here. For the Digest, we are very grateful to Andrew Halstead for filling, labelling and posting each issue since taking over from Richard Underwood at the start of 2020. The committee has decided that we will need to increase subscription rates from 2024, although members will be able to offset some of the increase by opting for an electronic version of the Bulletin rather than a printed copy. [Note from the Secretary: these increases are detailed elsewhere in this edition of the Bulletin.]

Other expenses have been generally less because of the absence of physical meetings and exhibitions, but a set of drawings by Dawn Painter for new keys to the Muscidae by James McGill was funded.

Some members will have noticed that it is no longer possible to pay by PayPal. This is because PayPal will no longer accept our credentials without the formal status of a charity or registered company. We apologise for the inconvenience this may cause, but it does at least have the benefit that we will receive the full value of each subscription without the deduction of a fee of 4.4%. Members can rest assured that our on-line banking account with NatWest is registered under their arrangements for unincorporated clubs and societies and incurs no bank charges.

Phil Brighton

4. Dipterists Digest Editor's Report

As happened last year the first 2022 issue appeared early to catch up with the quantity of material submitted during the previous year and was published on 12th January. The second part was published on 22nd July and both issues had the maximum number of 126 pages.

Articles and notes have continued to be submitted at a steady rate. There are presently 27 items in various stages of editing, review and revision. These amount to more than 160 pages of text so there is already more than enough to fill an issue and publication of the first 2023 part in the first quarter of the new year can be anticipated.

Submissions in A4 format and a variety of fonts are still occurring. To save editorial time I would urge all contributors to consult the instructions for authors that appear at the front of each issue. New authors are of course welcome and I thank all those who continue to support the journal with contributions. I am also grateful to Julie Locke and Tony Irwin for proof reading and to Andrew Halstead for efficient distribution.

Peter Chandler

5. A.O.B.

In recognition of Howard's service on the DF committee as Treasurer, Chairman and then Vice Chairman, Howard Bentley was presented (in absentia) with a drawing of *Linnaemyia picta*, commissioned from Dawn Painter. This species was first discovered in the UK by Howard. In addition to his committee roles, Howard was also active in DF meetings, playing a key role in organisation of the Canterbury field meeting and leading an Anthomyiidae workshop at Preston Montford. He continues to oversee our bursary arrangements. The Secretary noted that interruption to our Dipterists Day meetings by COVID meant that this presentation was long overdue and thanked Howard for everything he has done for the DF.

6. Vote of thanks to retiring committee members

The Secretary thanked the two retiring members of Committee, Matt Harrow and Malcolm Smart, for their contributions to the Committee (see Chair's report for details).

7. Election of Officers and ordinary members to committee

The Chairman is elected biennially. The Secretary, Treasurer and other Elected Officers with specific responsibilities (detailed below) require annual election. The constitution currently requires nominations 30 days in advance of the AGM. Ordinary elected committee members serve for two years.

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

Officers	**Already elected (elected 2021)**
Chair	Erica McAlister
	For re-election
Vice Chairman	Rob Wolton
Secretary	Jane Hewitt
Treasurer	Phil Brighton
Membership Secretary	John Showers
Indoor Meetings Secretary	Zoë Adams
Bulletin Editor	Darwyn Sumner
Assistant Bulletin Editor	Judy Webb
Digest Editor	Peter Chandler
Publicity Officer	Erica McAlister
Website Manager	Martin Harvey
Conservation Officer	Mark Welch
Training Coordinator	Vacancy
Ordinary Members	
For re-election (elected 2020)	Victoria Burton
	Chris Raper
Already elected (elected 2021)	
	Tony Irwin
	John Mousley
	Marc Taylor

The meeting voted unanimously to elect the officers and members of the Committee (proposer Richard Lane; Seconder, John Kramer.)

The Secretary thanked the Natural History Museum for hosting our meeting and Zoe Adams for organisation.

The meeting closed at 12:20pm

Spring Workshop 2023

10th to 12th February 2023

Preston Montford Field Studies Centre

Fungus Gnats by Peter Chandler. Occurring as this Bulletin is published. Report in the next Bulletin

Forthcoming

Staffordshire Invertebrate Science Fair 2023

Staffordshire University

College Road, University Quarter, Stoke-on-Trent, Staffordshire, ST4 2DE

4th March 10:30 to 16:00

Organiser for our stand is Jane Hewitt. Contact her with offers of help and materials

Malcolm, Anona & Jane in 2019

Erica & Jane 2022

Spring Field Meeting 2023

Wiltshire

19-21st May

The 2023 DF Spring field meeting will be based in Wiltshire, where we plan to visit some chalk river and grassland sites, possibly including one or two on MOD ground on Salisbury Plain. For those who have recently joined the DF, the Spring meeting is an excellent way to meet other members and learn more about flies. Attendees will need to book their own accommodation for the weekend. We hope to meet up for dinner on one of the evenings. If you are interested in attending, please contact the Secretary (jane.e.hewitt@gmail.com), who will keep you up to date with details.

From our 2004 Field Week, Spye Park (Wheelers Wood). Foreground Keith Alexander & Peter Chandler, background Jon Cole & Malcolm Smart

Summer Field Meeting 2023

50th Field Meeting

Swansea, South Wales

Saturday 8th July to Saturday 15th July 2023

We are now taking bookings for our summer field meeting in South Wales, an area last visited by the Dipterists Forum in 2009. We will be visiting a wide range of habitats, including plenty of coastal sites. The meeting will be based at the University of Swansea Singleton campus, which is very handily placed for easy access to the Gower Peninsula. The cost of attending the meeting will be £459.90 for half-board (includes an evening meal). Participants can opt for B&B only at £389.90 for the week.

What's provided?

- A single en-suite room.
- Use of a shared kitchen.
- Full breakfast (includes toast/cereal options for those not wanting a cooked breakfast every day).
- Free on-site parking.
- Access to a workroom for specimen pinning, meetings etc. This will be located in an outreach space at the university.

Please note that we do not have any double or shared rooms available this year. 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.

We have block-booked 30 rooms. To book a place on the meeting a deposit of £100 is required, with the remaining amount payable by 1st June 2023. The preferred method for payment of your deposit is by bank transfer using the following details:

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

Please add your name to the payment reference AND send an email (including any dietary requirements and whether you would like to opt for half-board or B&B) to both the Treasurer (Phil Brighton) and the Secretary (Jane Hewitt), who will be coordinating the administrative arrangements.

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

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

Last visited by Dipterists Forum in 2009 (Ed.)

Organiser needed for DF Spring field meeting 2024

Natur Am Byth is a Green Recovery partnership between Natural Resources Wales and a number of environmental charities. Currently in a lottery-funded development phase, the delivery phase (contingent on a further Lottery funding bid being successful) will run from 2023-2027. Natur am Byth have asked the DF if we would like to run our 2024 Spring field meeting in partnership with them. This meeting would be based in the Llandrindod Wells/ Rhayader area of mid-Wales. We are looking for a DF member to act as organiser/leader for this meeting - a moderate remuneration will be provided to the organiser by Natur Am Byth. The organiser will need to liaise with the partnership to chose sites and arrange access, lead the meeting, collate records and produce a written report. Anyone interested in taking on this role and wishing to find out more should contact the DF Secretary.

Jane Hewitt

Exhibitions & Fairs

I've been to loads of these, even one in Royton when I lived there. They occur across the country in various locations and at various times but Dipterists Forum focusses currently on just two. These are the October AES exhibition at Kempton Park and the Staffordshire Fair in March.

Logistics can be tricky as we've some equipment which ideally should move for use between these venues. Boards and banners as you can see from our pictures. Microscopes and specimens may be easier as we've duplicates at each site. Two things in particular could use your help. Firstly we've use of a big screen at Stafford so that needs to be used (laptop, internet + powerpoints or our Youtubes), secondly we need to have as many current Bulletins as possible on the stand + application forms so that interested folk can sign up on the spot.

If you've any ideas or offers of help then do contact the organisers. Or just join us for a chat and a wonderful day out.

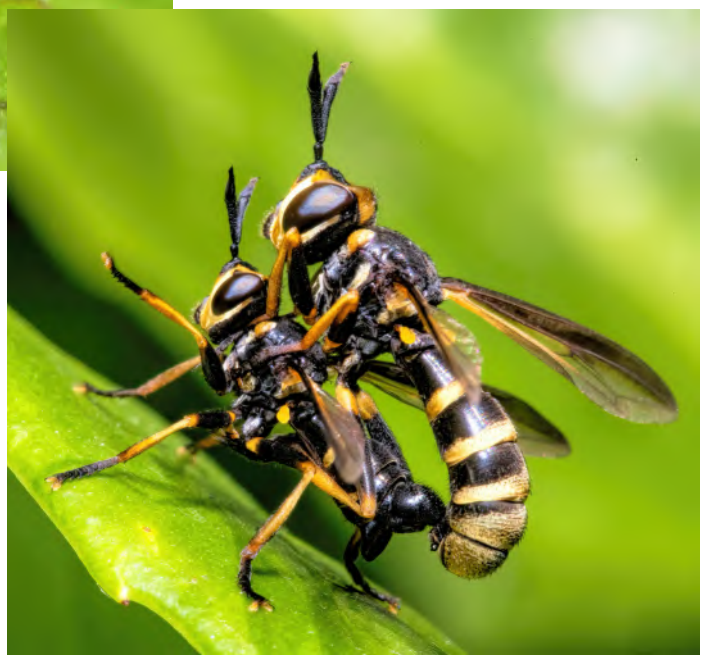
Ed.

Dipterists Forum Flickr group

Norellia spinipes
John Bingham
Nikon D7200

Lonchoptera lucens
Ian Andrews
TG-5

Lipara lucens
Sean Brown
Canon EOS-1D X



Leopoldius calceatus
Harry McBride
Unspecified camera

Hoverfly Newsletter
Number 73
Spring 2023
ISSN 1358-5029

Copy for **Hoverfly Newsletter No. 74** (which is expected to be issued with the Autumn 2023 Dipterists Forum Bulletin) should be sent to me: David Iliff, **Green Willows, Station Road, Woodmancote, Cheltenham, Glos, GL52 9HN, (telephone 01242 674398), email:davidiliff@talk21.com**, to reach me by 20th June 2023. Given the size limitations it may be worthwhile to send your articles in good time to ensure that they are circulated with the bulletin, in which newsletters are restricted to a maximum of eight pages. My thanks to all contributors, and also to Martin Matthews for his meticulous proof-reading of the text.

The hoverfly illustrated at the top right of this page is a female *Sphaerophoria rueppellii.*

HOVERFLY RECORDING SCHEME UPDATE: Spring 2023

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

At the time of writing this latest update, autumn is drawing to a close – the days are short and often very wet: much-needed rain after a summer of severe drought in southern England and elsewhere. Some species have been almost absent from the species lists this autumn, foremost of which are *Melanostoma*, which raises very significant questions about the likely abundance of hoverflies this coming spring. Are these absentees simply in diapause waiting for better conditions, or were they knocked out by heat shock and drought? Time may tell, but the most problematic issue is that of recognising the signal in the data and differentiating this from 2023 environmental variables.

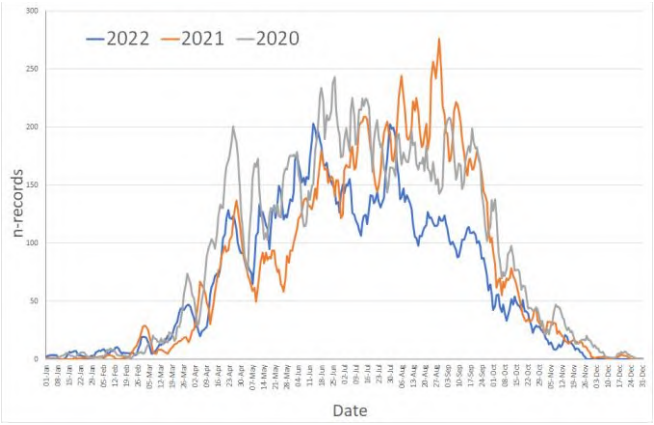


Figure 1 Seven-day running average of records extracted from UK Hoverflies Facebook group between 2020 and 2022. The impact of the August heatwave and drought appears to be substantial and both 2020 and 2022 obviously differ from 2021 where August was the most data-rich period in a year that was arguably closer to the 1980s and 1990s.

This evolving story tells us a lot about possible pathways for extirpation of insect populations but also highlights how difficult it is to draw conclusions from opportunistic datasets. We simply don't have the data needed to investigate cause and effect. Nevertheless, we can start to think about target species. Interestingly, both of the most frequently recorded *Melanostoma* seem to have been affected so watching for these

species at generic level may also be very useful. Consequently, we urge everybody to record everything that you see. The species that are most likely to give insights are not those that are rare or unusual; widespread and abundant species are far more likely to generate sufficient records to produce a picture that might give a hint about possible insect responses.

Despite the difficult conditions, there has been a lot of recording activity, with the Facebook Group generating almost 36,000 records (28,600 full and 7,200 partial records to genus/Tribe). This total is substantially down on 2020 and 2021 but is partially explained by the arrival of SyrphBoard – the new data entry system for hoverfly recorders that is being developed by Andy Murdock and Ioannis Sofos of MapLoom – a huge thank you to both for a fantastic platform that people have found easy to use. Several very active recorders have switched from posting on Facebook for extraction by our wonderful data team (ongoing thanks go to Adam Kelsey, Mick Chatman, Linda Fenwick & Katie Stanney). That change means that at least some records that would have made up the Facebook dataset are now entering the HRS via SyrphBoard.

Data in the HRS dataset

At the time of writing (late November) we have a large volume of data to incorporate from spreadsheets (10-15k), over 20k records on SyrphBoard and about a further 20k from iRecord. That is a big job and will absorb a lot of Stuart's time this winter. Stuart spent a long while in mid-summer updating the dataset and at the time it comprised well over 1.66 million records, including substantial numbers from 2022. It looks as though 2022 will not be as data-rich as the previous two, but the dataset is still likely to be in the region of 100k records for 2022.

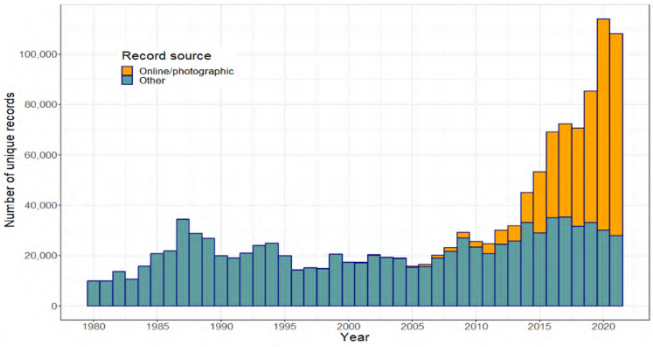


Figure 2 Numbers of records on the HRS database up until 2021 (as of September 2022). The orange section represents data largely derived from photographic recorders through the Facebook Group and iRecord.

Making best use of HRS data

Stuart has spent a lot of time this autumn looking at trends and trying to determine what is happening to some species. For some while it has been suspected that urban heat island (UHI) effects are not only benefitting a few charismatic species such as *Volucella zonaria* and *V. inanis*; there are also indications that a few species are retreating from urban areas. As yet, we cannot prove conclusively that any losses of species from urban areas are necessarily down to heat island effects, but it is interesting to note that one of the potential casualties is *Leucozona lucorum* – an easily recognised species that will not have been under-recorded. Furthermore, it is possible that the larval heat and humidity tolerances of *L. lucorum* are similar to those of *L. glaucia*, which has almost completely disappeared from SE England.

We can be a bit more certain about UHI effects on the phenology of at least a few other species. For example, Stuart looked at the phenology of *Epistrophe eligans* by comparing HRS data with CEH land cover data. The result (Figure 3) was potentially quite interesting but more work is needed to draw any firm conclusions. It certainly appears that *E. eligans* flies somewhat earlier and for a shorter period in urban than in rural areas.

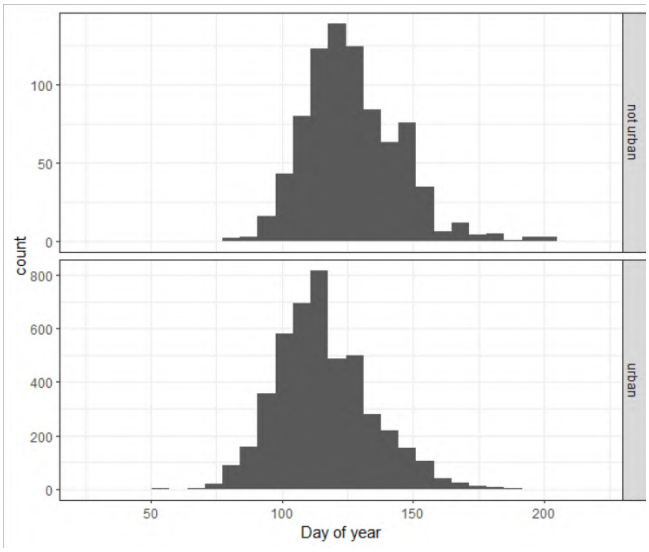


Figure 3 Phenology of *Epistrophe eligans* – Top – rural (not urban), Bottom – urban. Some of the outliers probably arise because data have been submitted for larvae but have not been flagged as such – these need further investigation.

These examples of possible UHI effects illustrate how useful full datasets are. So do please keep a record of everything you see. It may just help to unravel the ways in which some hoverflies are responding to our changing world. Whilst we may never resolve climate change, every little bit of evidence may help to change minds and inform decision-making (e.g. in the design of urban areas).

A new WILD*Guide*

Stuart & Roger are currently working on a revision of **Britain's Hoverflies**. It will be bigger – with fourteen additional species and a fair amount of additional text. The photographic content will also be revamped so that best use is made of some of the amazing photographs that have emerged in the past ten years.

In past editions we have not included maps of Irish coverage but it is hoped that the new edition will at least include Irish maps as far as we can go. Data for Ireland is a lot sparser than for GB, not least because there is no active recording scheme. Is anybody inclined to rise to that challenge?

The new book will go to press in February and will appear in the bookshops in the spring (?May).

DEVELOPING A LONGER-TERM LOCAL DATASET

Roger Morris

Having moved to Mitcham in 2017 for family reasons, I have not had the same opportunities to travel that I once had. London is too far from Scotland just to jump in the car and be in the borders in a few hours – a battle around the M25 is just the start of what is more like a seven- or eight-hour drive; it is so draining that I have yet to make an attempt. Covid made matters worse, as any sort of travel was prohibited for critical parts of 2020. I have therefore concentrated on recording locally at a scale that I had never previously managed. Each day, I record over a route of about 5 kilometres. Its precise course changes over the season as different places are productive at different times of year. My prime objective is to record all species present on a given day. Where I stop depends entirely upon the locations that are most productive on that day.

The system works like a transect because there is relative consistency in recording: all species recorded at a 1km level but with individual records located to 100m if only one location is occupied by a given species in a given 1km square. So, the data comprise a combination of four-figure and six-figure grid references. In addition, the time spent recording is generally similar. I also add in counts as best as possible, but for some abundant species that require microscopy or at least a hand lens in the field, numbers are inevitably limited or estimated. It seems better to me that one should cover the distance and the fauna present, rather than cover a tiny area in great detail.

Occasionally I go further afield but adopt a similar approach. Most of my recording is within a 20-mile radius, so it is quite faithful to a small area and therefore to a similar (but not identical) climate. Despite this relatively small radius, it is very apparent that species abundance and composition varies according to altitude (a range of just 300 feet) and distances from urban heat island (UHI) effects.

This approach generates a great deal more data than I managed in the past, and starts to highlight a number of possible differences between the years. So far, I have almost 3 years' data (written in late November 2022 so December 2022 is

missing). The start of 2020 was exceptionally warm and recording got off to a flying start (forgive the pun). It abruptly changed to heatwaves and drought from June to August. Conversely, 2021 started cold but was comfortably warm in mid-summer. It was comparatively damp too. The overall track of records was therefore very different (Figures 1 & 2). In 2022, spring started early and, like 2020, was followed by heatwave and drought. This time the scale of the heat and soil moisture deficit was greater than anything I can recall, apart, perhaps, 1976.

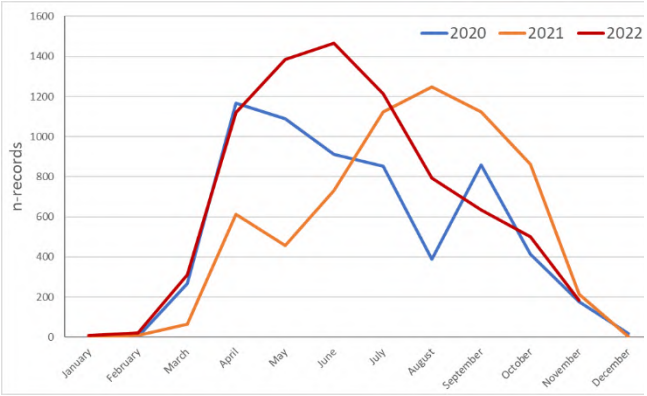


Figure 4 Numbers of monthly records 2020 to 2022. The similarities between the start of 2020 and 2022 are very clear. 2021 started later and the numbers of records peaked far later in the year, at a time when hoverflies used to be most abundant and coincident with the peak of summer flowers. Interestingly, despite the autumn being very warm in 2022, the numbers of records generated closely mirror those of 2020.

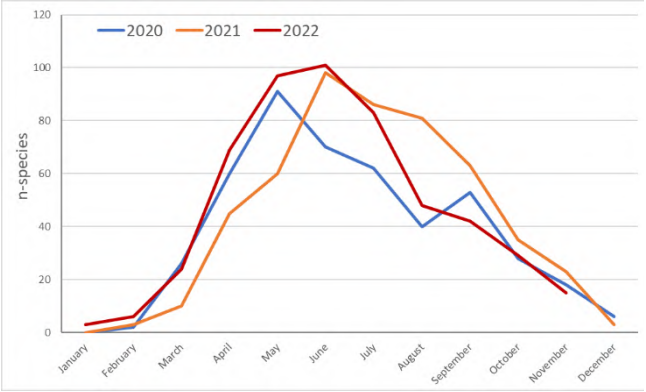


Figure 5 Numbers of species recorded on a monthly basis from 2020 to 2022. Again, the similarities between 2020 and 2022 are noticeable at the start and end of the seasons. Differences in the summer months are also clear, probably reflecting differing weather patterns.

Both 2020 and 2022 have influenced my ongoing thinking about the effects of heat and drought upon insect diversity. The problem is that we have very limited data to link cause and effect, and even fewer detailed point data to compare with local climatic variables. This is the sort of recording that needs to be done, but is anybody interested in doing so?

For younger readers, maybe setting up a standardised walk of your favourite 'patch' would generate research data that you could work on in the distant future? I wonder whether the late (and sadly missed) Aat Barendgret was thinking that way when he started his forest transects in the early 1980s? He was committed to recording for many years but the numbers of visits varied enormously. Aat's work is worth looking at because it serves as an inspiration to others who are prepared to think about long-term data collection and its potential use.

Whether the data I generate will ever be used by me is an unknown. Nevertheless, detailed time-series datasets may be exceptionally useful in decades to come. Many of my typical routes can be reconstructed from my records, should anybody feel the need to repeat them in future.

Reference

Barendregt, A., Zeegers, T., van Steenis, W. & Jongejans, E., 2022. Forest hoverfly community collapse: Abundance and species richness drop over four decades. *Insect Conservation and Diversity*, 1–12. https://doi.org/10.1111/icad.12577

PIPIZA – don't be frightened, and easy extra species to be found

Alan Stubbs
(alan.stubbs@buglife.org.uk)

I understand that records of *Pipiza* have been declining, either because confidence in naming them is declining, or because such flies are less frequently encountered than in the past. I am in the process of revising the key, and be reassured

that I am finding ways of identifying them with increased confidence. In looking back to the text in **British Hoverflies**, there has been no substantive revision since the original publication in 1983. I spent a whole year trying to resolve the tangle of difficulties and uncertainties; in the end I just had to jump so as not to hold back publication indefinitely. Since 1983 there have been various publications on the European fauna, though not examining and addressing the forms I segregated under *noctiluca*. The current position is that 12 species are recognised in Europe, including our 6 and 3 others that occur in immediately adjacent countries on mainland Europe (the other 3 are seemingly confined to eastern and southern Europe). Two name changes to our species have already been accepted on the British list: *fasciata* (ex. *fenestrata*) and *notata* (ex. *bimaculata*). The segregation of most British species is not difficult: the most awkward separation remains *noctiluca*/*notata*: I think I have an easy segregation for females which needs more testing.

Potential extra species: easy ones

P. accola is very similar to *luteipennis* which is associated with elm leaf-curl aphids. *P. accola* is associated with Cherry Plum *Prunus padus*, presumably feeding on the leaf-curl aphid *Myzus padellus*. Cherry Plum is mainly a northern and western shrub (also native and widespread in Norfolk) that flowers fairly early in the spring, with very distinctive spikes of white flowers. I doubt anyone has thought of targeting these flowers, which the hoverfly is said to visit. The yellow tarsi of males and some females are an immediate clue as to identity (some females have darker tarsi so are less distinct).

P. festiva is associated with poplars and has been bred from spiral leaf-stalk galls on Black Poplar and its variety, Italian Poplar (not the widely planted hybrid Black Poplar). Whilst native Black Poplar is scarce and usually occurs as only 1 or 2 trees, Italian (Lombardy) Poplar is planted quite widely, especially in urban areas. The main limitation in urban areas can be the lack of flowers in places such as well mown recreation grounds. It is has the build of *noctiluca* but has yellow tarsi, and often tergite 2 has the pair of spots fused.

P. quadrimaculata. Any *Pipiza* with 4 spots on the abdomen is something special. On the current British list, the male of *fasciata* (ex. *fenestrata*) has 4 large spots (at least the spots on tergite 2 are large) but it has seldom been found in Britain (even in the past when females were common). The only other qualifying European species is *P. festiva*, seldom 4-spotted.

According to European keys, *P. quadrimaculata* uniquely has the front of the frons and antennal base placed half way down the head (side view), higher up than in other *Pipiza*. However, in Britain a 4-spotted male (collected by Roger Morris) thus qualified as *quadrimaculata* but otherwise did not fit; my conclusion is that it must be *fasciata*.

Both in the field and in collections, *quadrimaculata* is fairly distinctive, small and rather dumpy, the sides of the abdomen somewhat convex, more so in females, giving a shorter oval shape compared with other species. Also, both sexes normally have spots (males only in *fasciata*). In mainland Europe, *quadrimaculata* has some affinity with conifer and mixed woodland; should that be a relevant lead, then conifer plantations may be the place for this species to colonise Britain.

Observations sought

Pipiza fasciata. Once a common species in south-east England, as females, it seems to have vanished. True, or are records not being submitted?

General. There may be a backlog of snips of observations and experience that add to the very limited knowledge given in **British Hoverflies**, including flower preferences among other ecological information. Hopefully those who rear hoverfly larvae have new information.

Callicera rufa at RSPB Dovestone – a brief update

Ken Gartside

The nationally scarce Hoverfly, *Callicera rufa* was first discovered locally at RSPB Dovestone, near Oldham but in the Peak District, in August 2017 in artificial rot holes we had created - but only in larval form. That was the first ever Yorkshire record to add to many others nationally, so not just in Caledonian Pinewoods anymore.

Further to my articles about this – the findings and methodology used - in this newsletter and in both Sorby and YNU natural history society publications [1], artificial rot holes were also successfully created at the National Trust Longshaw estate in the Peak District too, with adults being reared by Rob Foster. Both these sites used upland plantation woodland of commercially planted Pine and Larch to cut the holes in stumps with chain saws. The excellent New Naturalist book on the Peak District by Penny Anderson (pub. 2022) briefly mentions these efforts.

This is a short update on further developments and some potentially useful lessons from here at Dovestone. The site proved difficult to manage and control consistently. It became rapidly encroached by natural birch regeneration and bramble thickets, making even locating the original twelve cut stumps difficult. Although this has provided a far better set of habitats for invertebrates and vertebrates in general than a plantation wood - which was a desired outcome - it has made access hard, and only four stumps were able to be found and inspected.

Since 2017 these have lived up to their name and have rotted down to an extent easily, do not hold water well, only retaining some dampness, and are thus more prone to dessication in summer. Last year's prolonged heat wave was not helpful, even though we tried to maintain some water in the rot holes, garnered from both reservoir and streams.

The upshot was that we found no larvae in dried holes, but in recognition of the issues, wardens at Dovestone cut fresh rot holes. We changed the methodology a little, using bigger stumps to cut out bigger inverted pyramids. Also, this time we used blown down larch tree trunks which lay horizontal, to cut lengthways with a V notch and create lagoons with a length of between 2 to 4 ft and depth of 6 to 8 inches. These lost water initially through seepage/absorption, but as the wood became more soaked, started to hold water better.

Eventually, after a few months, thanks to surveys by Steve Suttill, it was revealed that the V notches in particular were holding good numbers of (probably) *Myathropa florea* rat-tailed maggot larvae. So at least we know it all works.

With the hope that Callicera rufa is still around, we will be surveying these artificial lagoons in spring to see if we can again find the larvae. Plus of course any trunk sunbathing or ovipositing adults. We live in hope!

I think the lessons are to manage scrub better on a regular basis, cut holes as big as possible in the biggest stumps, to avoid full sun siting and to go equipped with secateurs.....

[1] YNU, The Naturalist, December 2017, Vol 142, No 1096 refers.

Tree rot hole (Photo: Ken Gartside)

Callicera rufa larvae (Photo: Ken Gartside)

WHAT CAN BE IDENTIFIED FROM PHOTOGRAPHS?

Roger Morris

Whilst working on the updated and expanded version of the **WILD***Guide* 'Britain's Hoverflies' a challenging conundrum emerged: can we identify what can be done from photographs? It is a problem that I have grappled with for a decade or more, with the overriding question 'by whom'? If we provide guidance then it might be taken that we are saying x or y is doable from photographs, but then the subsequent question arises: what about photographic quality?

It is an entirely different matter contrasting the abilities of a long-established specialist who has spent years in the field and who has a mental picture of many/most of the regularly encountered species, with those of a novice who has very little experience to draw upon.

For this reason, I try to avoid the use of 'jizz' when offering identifications on the Facebook group. The big question is 'can I see enough of the critical characters to make an acceptable identification?' If I can, then I may offer my thoughts and they may be taken as an identification that can be used for recording purposes. I am, however, not infallible and like anybody else I will make mistakes. That is why I do not like the term 'expert' which is so often taken to suggest infallibility.

I caution against 'jizz' because statements like 'bigger than', 'broader than' etc are highly subjective and can be affected by the angle of a photograph as well as the light source and depth of field. Moreover, such statements are really only applicable by the specialist whose jizz characters are being used. Those I might use will differ from those of others, as nobody's eyes and brain work in identical ways. Moreover, a novice using jizz is like the novice trying to find their way through the morass that is Joy's key to beetles! The only way of reliably building a knowledge of hoverfly identification is to work patiently through keys and to check against voucher specimens.

Thus, it must be concluded that whatever is said about the capacity of specialists or beginners to identify hoverflies from photographs is highly subjective and particular to the person in question. Nevertheless, some guidance is needed because there is a growing reliance upon photography to create biological records. For the purist, this paradigm may be anathema but we simply don't have the luxury of a huge pool of specialists scouring the country for hoverflies or whichever other taxa are under consideration. Therefore, we must work with what we have, and we must set parameters to define the limits of what can and cannot be identified from photographs. I have therefore concluded that there are two possible ways of assessing the potential for identification from photographs:

1. Species that are likely to be recognised if the photographer produces good, sharp images at high resolution and from several angles (top-down, side view and face-on), and the person providing the identification has wide-ranging experience of the British fauna.
2. Species that are likely to be recognised by a person who has wide-ranging experience of the British fauna and the photograph is a simple top-down photograph of variable quality.

In both cases, we have additional problems. There are several species that once were considered to be a single species and which now comprise a complex that can only be more precisely identified from microscopic and often obscured features such as tarsal pits or characters within the male genitalia. My list therefore included several such complexes as well as the segregates. Using this highly subjective approach I concluded that the differences between the two scenarios was substantial, as shown in Table 1.

	Ideal photos	Conventional photos
Not possible	86	130
Sometimes possible	105	63
Possible	98	96

Table 1. *Subjective analysis of species that might be identified by an experienced specialist from an ideal suite of photographs and from a top-down photograph of indeterminate quality.*

This exercise does not solve the basic question of what can, and cannot be identified from photographs, but hopefully it helps to set a few parameters that explain what is possible and also sets the boundaries of what should not be considered a reliable field record. So, for example, unless there are reliable and easily depicted features that will be picked up in high-quality photographs, we must consider a species unlikely to be reliably identified from photographs. This cohort includes all species in which only males can be identified and in which internal genital features are an essential part of the identification process. It also includes some species that can only be identified from larvae or pupae, such as *Microdon mutabilis* and *M. myrmicae*. This particular separation raises another question: to what degree should we assume that identification can be made on habitat alone? The problem of habitat association is complex because it is quite possible for two very similar species to be juxtaposed with the potential to stray from their preferred habitat (as in adjacent limestone pavements and acid mires.

Out of caution I have always assumed that it is not wise to rely on habitat features to make an identification. My thinking arose because it might be assumed that, in the absence of Butterbur *Petasites hybridus*, *Neoascia* with clouded wings and a completely black 4th tergite will be *N. podagrica*. Yet, I have found *N. obliqua* in a small number of places (mainly Scotland) where Butterbur is missing.

As yet, there is no protocol for determining the species that can be reliably identified from photographs, so the approach adopted in the **WILD***Guide* is experimental and must not be regarded as definitive. It is a guide that is open to adjustment and debate. Some further guidance can be gained from the frequency with which species are misidentified on platforms such as iRecord and iNaturalist. I have undertaken some analysis of the iRecord identification issues but there is a lot of scope for further analysis. Importantly, in most cases the identification problems are by relative novices from generally low-resolution photographs. In my analysis it has become clear that the most frequent problems lie in some of the commonest/most abundant genera, especially in *Eristalis* and in *Syrphus* where it seems that insufficient information is processed by the recorder on account of not reading the guide book or by using a guide that covers a representative sample of species but does not list the other possible species (e.g. *Syrphus ribesii* in general field guides to insects).

There is now a wealth of experience with identifying hoverflies from photographs but it is further complicated because some species are rarely recorded in this way: finding species such as *Brachyopa* is an art and the animals concerned do not lend themselves well to detailed photography. Similarly, there are numerous *Platycheirus*, *Cheilosia* and Pipizines that are difficult to find and even more tricky to identify. However what we perhaps do not yet understand is how we might use features depicted by live animals that become less pronounced or missing in a long-dead specimen. We must remember that all of the keys we use are based on museum specimens and that the concept of 'live animal taxonomy' is still in its infancy.

If any academic is interested in developing a classification of what is and is not possible using photographs and a group of student volunteers, I would be keen to help to develop a system that separated species into different levels of identification challenge.

Cranefly News

The Dipterists Forum Cranefly Recording Scheme

For Superfamily Tipuloidea & Families Ptychopteridae & Trichoceridae

Newsletter No 40 **Spring 2023**

Editor: John Kramer

Ctenophora flaveolata Photo:*Alan Watso Featherstone*

Cranefly training and 'Craneflies to Light' – Pete Boardman & Rachel Davies

During 2022, the Cranefly Recording Scheme (CRS) worked with the Field Studies Council (FSC) BioLinks project (2018 – 2022) to run a number of training days for BioLinks participants. These followed the standard BioLinks format of 'Learn to Love' events, field days, and microscope days. Events were run at the FSC's centres in Bishop's Wood, Worcestershire, and Bushy Park, London. Also, a residential course was added in the autumn of 2022 and run at the Preston Montford FSC centre. All cranefly, fold-wing cranefly, and winter gnat records made during the above events were added on i-Record by the secondary author and comprised a good range of common or local species.

The relationship between CRS and FSC was enhanced further by the 'Craneflies to Light' project, targeting moth trappers which was trialled for a six-month period, between 1st June to 1st December 2022. BioLinks asked participants and others to send in any records of craneflies that they had found attracted to light, or collect specimens if people were unable to identify them. These were identified at extra BioLinks volunteer days with the author overseeing identifications.

Over the 6 months, 50 cranefly samples were received from 5 different recorders, mostly based in Worcestershire. At the same time the Moth Trap Intruders Group were also asked for cranefly bycatch and during the same period of time and collected 156 samples. Between both groups of participants, a total of 24 species of cranefly, and a single winter gnat, were recorded as listed below. It is likely some of these species are new to light, but it is difficult to know fully as no comprehensive up to date list of species is known.

Tipulidae – long-palped craneflies	*Tipula maxima* – a long-palped cranefly
Nephrotoma appendiculata – a tiger cranefly	*Tipula obsoleta* – a long-palped cranefly
Nephrotoma cornicina – a tiger cranefly	*Tipula oleracea* – a long-palped cranefly
Nephrotoma flavescens – a tiger cranefly	*Tipula paludosa* – a long-palped cranefly
Nephrotoma flavipalpis – a tiger cranefly	*Tipula pagana* – a long-palped cranefly
Nephrotoma guestfalica – a tiger cranefly	*Tipula pierrei* – a long-palped cranefly
Nephrotoma quadrifaria – a tiger cranefly	*Tipula scripta* – a long-palped cranefly
Nephrotoma scurra – a tiger cranefly	
Tipula confusa – a long-palped cranefly	**Limoniidae – short-palped craneflies**
Tipula fascipennis – a long-palped cranefly	*Austrolimnophila ochracea* – a short-palped cranefly
Tipula flavolineata – a long-palped cranefly	*Dicranomyia chorea* – a short-palped cranefly
Tipula fulvipennis – a long-palped cranefly	*Rhipidia maculata* – a short-palped cranefly
Tipula lateralis – a long-palped cranefly	
Tipula luna – a long-palped cranefly	**Trichoceridae – winter gnats**
Tipula lunata – a long-palped cranefly	*Trichocera annulata* – a winter-gnat

We would like to thank staff and participants within the FSC BioLinks project, FSC Field Centres, and the Moth Trap Intruders group, including; Keiron Derek Brown, Gino Brignoli, Jean Young, Carol and John Taylor, Simon Dyer, and Mike Southall.

Pete Boardman & Rachel Davies

Light-trapping in Leicestershire – VC 55. John Kramer

Following Pete Boardman's initiative, I pulled the 'at light' records from the Leicestershire cranefly database of about 5,000 records. The first specimen recorded from light was in 1975, a specimen of *Pedicia rivosa* recorded by Peter Gamble in Grace Dieu Wood, the rest being recorded during this millenium. Moth-ers in VC55 are very active and have recorded a number of 'firsts' for the County from their light traps. It is evident that many craneflies are nocturnal or crepuscular, but are they all ?? This behaviour probably reduces dessication as well as avoiding some predators. But they are predated by bats and so a nocturnal habit may also be a seriously hazardous one.

List of Craneflies from Leicestershire light-traps.
Unless otherwise stated, specimens were trapped in gardens.

Tipulidae	**Pediciidae**
Nephrotoma appendiculata (W)	*Pedicia rivosa* (W)
Nephrotoma flavescens	*Tricyphona immaculata* (W)
Nephrotoma quadrifaria	
Nigrotipula nigra	**Limoniidae**
Tipula maxima	*Ormosia lineata*
Tipula livida	*Ormosia nodulosa* (W)
Tipula lunata	*Symplecta stictica*
Tipula vernalis	*Trimicra pilipes*
Tipula luteipennis	*Epiphragma ocellare* (W)
Tipula confusa	*Euphylidorea lineola*
Tipula pagana	*Euphylidorea dispar* (W)
Tipula rufina	*Dicranomyia chorea* (W)
Tipula oleracea (W)	*Limonia nubeculosa* (W)
	Limonia phragmitidis (W)
(W) Trapped in woodland	*Rhipidia maculata* (W)

Discussion.
Are all craneflies attracted to light or only a suite of nocturnal specialists? One factor influencing the results above must be where traps are located. Most of the results from Leicestershire are in gardens. and so I have separated the relatively few woodland records to show that it is not only garden species that are attracted to light. This means that results from traps set up in more natural biotopes are especially interesting. (See John Showers' records below.) Another factor is the trapping date related to cranefly emergence. More work needs to be done to account for the absence of many common species, but more trapping at the right times and the right habitats would probably trap the missing species. The Leicestershire data above is probably an under-estimate of cranefly species light-trapped since the mode of capture is not always recorded especially if recorded in gardens. Also specimens are photographed on house or garage walls after a light trapping session, so, although they are attracted to light, they are not actually in the trap.

New VC 55 Species Recorded in garden Light traps
Nigrotipula nigra Leicester & Rutland Entomological Soc. (LRES) Newsletter #49, Sept. 2013
Tipula livida LRES Newsletter #61 Sept. 2019

Acknowledgements
Thanks to Leicestershire Moth-ers Graham Calow, Alan Cann, Andrew Dejardin, Peter Gamble, Ted Gatan, Andrew Godfrey, Mike Higgott, Craig Mabbett, Dave Nicholls, Adrian Russell, Mark Skevington, Alan Semper and Sue Timms for their cranefly records.

The Leicestershire & Rutland Entomological Society is produced a series of Status Reviews of the Diptera of VC55 up to 2020 to act as a baseline for future recording effort.
These, and the Newsletters, are available at**:** www.naturespot.org.uk/content/leicestershire-rutland-entomological-society

Light-trapping in Northants. VC 32. John Showers

Nearly all the results below come from Pitsford Water Nature Reserve except where otherwise stated. There are 2 MV traps. Trap 1 is on the shore line, close to reeds, bare margins, some grassland rides and mixed woodland. Trap 2 is set in a glade in the same stand of mixed woodland but further from the water.
[The Rothwell trap is actinic and on the patio in my garden, which has shrubs, herbaceous plants, an apple tree and a conifer tree but no lawn. The trap at Farthinghoe (F) is in a former railway cutting, then a landfill site and now a nature reserve with woodland and some grassland.]

List of Species trapped

Tipulidae	**Limoniidae**
Nephrotoma appendiculata	*Erioptera nielseni*
Nephrotoma cornicina	*Molophilus griseus*
Nephrotoma flavescens	*Molophilus ochraceus*
Nephrotoma quadrifaria	*Ormosia nodulosa*
Nephrotoma scurra	*Symplacta stictica*
Tipula vittata	*Symplecta hybrida*
Tipula fascipennis	*Trimicra pilipes*
Tipula helvola	*Austrolimnophyla ochracea*
Tipula lunata	*Euphylidorealineola*
Tipula vernalis	*Dicranophragma adjunctum*
Tipula submarmorata	*Dicranophragma nemorale*
Tipula varipennis	*Phylidorea ferruginea*
Tipula confusa	*Phylidorea fulvonervosa*
Tipula obsoleta	*Pilaria discicollis*
Tipula pagana	*Pilaria fuscipennis*
Tipula staegeri (G)	*Dicranomyia didyma*
Tipula oleracea	*Dicranomyia modesta*
Tipula paludosa	*Helius pallirostris*
Tipula subcunctans	*Limonia nubeculosa*
Tipula scripta	*Limonia phragmitidis*
Tipula lateralis	*Rhipidia maculata*
Tipula montium	
Tipula pierei	**Trichoceridae**
	Trichocera annulata
Pediciidae	*Trichocera regelationis*
Tricyphona immaculata	*Trichocera saltator*
	Trichocera hiemalis
(G) Garden only	*Trichocera major*

Acknowledgements
Thanks to light-trappers and Recorders Mischa Crass and Dave Francis. See also Cranefly News #29, Spring 2015, and Cranefly News #32, Spring 2017.
John Showers

Conclusions
Although many genera are missing, this can be explained by the absence of light-trapping in their habitats. The three sets of results above, support the hypothesis that all of the Infra-order Tipulomorpha - Craneflies (Tipuloidea) and the Winter Gnats (Trichoceroidea) are attracted to light. Attempts could be made to light trap the missing species in their known locations. Ed.

Some suggested amendments to 'British Craneflies' Alan Stubbs and John Kramer
Suggestions would be welcomed and useful in the event of the publication of the second edition. Some suggestions from readers are as follows:

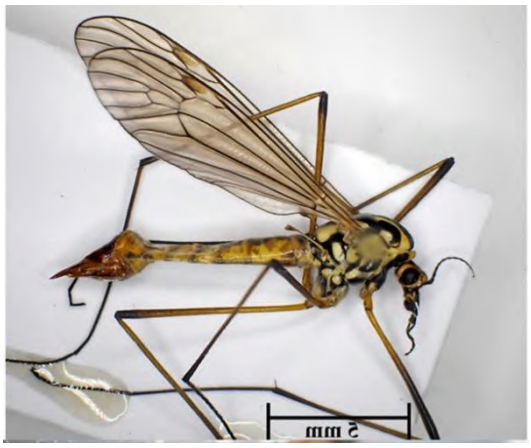
Part A **(p198*) Ctenophora flaveolata* has now been confirmed from Scotland !** The first occurrence of this species

in Glen Affric NNR, Eastern Ross, in the Highlands a little north of Loch Ness was recorded by Alan Watson Featherstone on 26th May 2018 when a male specimen crawling on a road was captured and sent to Peter Chandler to confirm the identification. (See the detailed note in Dipterists Digest 2018, Vol 25 No. 1). The second record by Alan Watson Featherstone, on 5 May 2022 (the third Scottish record) was of a male resting on the westernmost of a row of 20 or so mature oaks. (See photo of specimen by A.W.F.) The sites where they were found were about 2km apart in a major stand of ancient Caledonian forest, famed for its native Scots pine. There is no beech on site hence the fly must be breeding in the very small population of surviving mature oak. Although not assessed, it seems unlikely that all these trees provide a viable larval habitat, with the inference that long term survival is unlikely at this site. Early May is before the most active period of recording takes place in Scotland, (boosted by visits from southern dipterists) so the cranefly may be more widespread than realised. This is a very elusive species unless you are in the right spot on the right day.

Alan Watson Featherstone also located another Scottish record on the NBN Atlas (www.nbnatlas.org) from Fife, in 2021. The specimen was photographed on 9 June 2021 in the garden of Kim Worthington in Cubar, then posted on her Facebook page from where it was recorded by Wendy Irons. [Thanks to Peter Chandler for information and Alan's photo.]

Part B. ***Nephrotoma appendiculata* v. *N. quadrifaria.***

Nephrotoma quadrifaria



Nephrotoma appendiculata

There has been a suggestion that there is a problem with the separation between *Nephrotoma appendiculata* and *N. quadrifaria*. There seems to me to be no problem, neither with the key nor the text, although I am willing to be persuaded otherwise if someone wishes to take up the debate. For example, there may be parts of the country where *N. quadrifaria* lacks the dark seam across the wings. Newly emerged (teneral) specimens of all species will always be faintly marked and often it helps to tip the wing and view it a narrow angle. In the key the species are separated by the pale or dark stigma together with the 'dark seam' on the wings of of *N. quadrifaria*, features which are usually clearly visible. The 'inverted U shaped mark is used in conjunction with with the pale stigma spot. *N quadrifaria* does not usually have a pale stigma spot in nature, but bleaching can happen where malaise trap material in spirit has been placed in strong sunlight. In such cases of doubt, genitalia structures must be used and support is provided for this. (See Plates D & F). In the text (p203) an inverted U-mark above the haltere of *Nephrotoma appendicata* is said to be the confirming (not a diagnostic) character; ie it is the only pale stigma'd British species which has this 'inverted U' character. In fact *N. quadrifaria* (with dark stigma and dark seam) also has this mark.

Female *appendicata* have a uniformly broad dark stripe along the dorsal median axis of the abdomen. In addition to the dark seam, specimens of N. *quadrifaria* have a row of triangular dark markings although there is not a sharp discontinuity between these abdominal markings.

Part C. ***Tipula* Key, Couplet 11 - Prescutal (dorsal thoracic) patterns (Key. Page 81)**

Those used to using the test key for *Tipula* will be aware that Couplet 11 is a new and, with 4 choices, a rather unusual approach to this group of *Tipula*. We are directed first to the subgenera where species separation then occurs.

Subgenera *Acutipula, Schummelia, Vestiplex, Dendrotipula Odonatisca, Mediotipula, T. (Lunatipula) vernalis,* and part of *Pterelachisus* are first removed to be keyed to species in the appropriate sections. This latter part of *Pterelachisus* comprises *T. mutila* (with R_2 absent) and *T. luridorostris* (with short R_2, not reaching the margin.)

The key at Couplet 11 refers to prescutal (dorsal thoracic) patterns which are difficult illustrate by means of the thumb-nail sketches. Hence, plate 32 provides some photos and perhaps more are needed, cross-referenced in the key.

Couplet 11 offers 4 choices, in sequence designated a to d below.

11a) '*Prescutum with a pale median line clearly separating the subdorsal stripes, at least in the front three-quarters.*' There is no photograph in the book to illustrate this pattern. Perhaps *T. unca* or *T.melenoceros* could be used as an example.
Presence of a pale median line sends us to **Couplet 12** where plain- and patterned-winged species are separated.

Plain winged species (Platytipula) at 13, are T. *luteipennis* and *T. melanoceros* . and the genera *Savtshenkia* (part)), and *Lunatipula* at 14, Patterned-winged species at Couplet 15 are: *Beringotipula* (Couplet 16) *Lindnerina* (couplet 17) *Pterelachisus* and *Savtshenkia* (Couplet 18).

T unca . *T. melanoceros*

11b) '*Prescutum with five distinct dark stripes, the median one thin. The grey colour around these stripesis equally pale.'* (Plate 32c)
This leads to Pterelachisus (part) on p 90, which identifies *T. pabulina* and *T. truncorum,* and it is illustrated in the book by *Tipula pabulina.*

T. pabulina. *T. truncorum,*

11c) '*Prescutum with dark median stripe resulting from fusion of subdorsal stripes, which, with lateral stripes are pale within dark margins*.' (Plate 32 a)
This leads to subgenus *Tipula (Yamatotipula)* and it is illustrated by *Tipula lateralis*. Confusion might be possible with the *Vestiplex* pattern but this has been previously removed and the terminalia are very different.

T.lateralis

11d) *'Prescutum with a very dark median stripe, of almost uniform colour although it may have an even darker thin median stripe.*' (Plate 32d)
This again leads to Couplet 12 where plain- and patterned-winged species are separated. *T. (Platytipula) luteipennis* is keyed out here with plain wings and it is illustrated by Plate 32d.
Those with a pale median stripe and patterned wings (15) are *T. (Beringotipula) unca, T. (Lindnerina) bistilata,* and some of the genera in subgenera *Pterelachisus* and *Savtshenkia*.

T.luteipennis

Cranefly People: Osten Sacken's remarkable work on Craneflies. John Kramer

Charles Robert Osten Sacken (OS) was born in St. Petersburg in 1828 and by the time that he wrote his first paper in 1854, the study of Craneflies was well underway. In 1758 Linnaeus had introduced the only 2 genera, *Culex* and *Tipula* for those 'Nemocera' (Nematocera) with and without piercing mouthparts ('Bities' and 'non-bities'.) Latreille (1802) had established the family Tipulidae and separated them into those with long-palps and those with short palps (*Tipula longipalpi*, and *Tipula brevipalpi*); between 1803 and 1838 Johann Meigen had named many more cranefly genera (eg *Erioptera, Limonia, Tipula, Nephrotoma, Ctenophora etc*) describing their differing venations but but without attempting any key or system of classification.

Another French dipterists, Macquart in 1834, separated *Limnophila* from the genus *Limonia* ('Limnobia') by virtue of the differing venation, and the presence in *Limnophila* of a 'petiolate areolet', ie a stem vein (R_2 +R_3) from which branches veins R_2 and R_3. In *Limonia* R_2 and R_3 are fused and so there is no fork here.

Macquart followed Latreille in subdividing the '*Tipula terricolae'* into the Tipulidae longipalpi and the Tipulidae brevipalpi and separated the genus *Pachyrhina* from *Tipula* on the difference in numbers of antennal flagellar segments. By 1854 most of the key features of 'Tipulidae' had been observed and recorded.

Between 1854 and 1869 Osten Sacken, working in America, published a number of papers on craneflies, leading to his major work, his Monograph *On the North American Diptera – Vol IV, Tipulidae* with 345 pages, published by the Smithsonian Institute in 1869. This dealt only with the short-palped craneflies, Tipulidae brevipalpi. His stated intention was to cover the long-palped craneflies in another volume, but this never happened, although in 1886 he published a Review of the Tipulidae longipalpi. In this Monograph on the short-palped craneflies he published a history of the subject, descriptions of all the then known species and keys to identify them. If you were beginning the study of craneflies, this Monograph would make an excellent introduction to the subject. It was just what the Rev.William John Wingate was praying for in 1906, (See DF Bulletin 66, 2008) but alas, there was no internet and no Catalogue of Craneflies of the World (CCW) at that time, and books from overseas were hard for most people to obtain. (OS's 1869 book is now available to download from CCW. See Oosterbroek, P. at http://ccw.naturalis.nl below.)

OS identified the '**Tipulidae longipalpi'** as follows: Last joint of the palpi very long, whiplash-shaped, much longer than the three preceding joints taken together ; the auxiliary vein (subcosta) ends in the first longitudinal vein ; no cross-vein between it and either of the two veins running alongside of it

Regarding the '**Tipulidae brevipalpi',** he noted that The bulk of the tribe, may be divided into two large sections:

A. One radial area. Antennae, 14-jointed. No distinct pulvilli. Ungues (claws), with distinct teeth on the underside. No spurs at the tip of the tibiae. *Limnobia (Limonia)*

B. Two radial areas. (ieAntennae, 16-jointed. Pulvilli distinct. Ungues(claws) smooth on the under Side:
Tibiae, with spurs. *Limnophila*
Tibiae, without spurs *Erioptera* etc

He allocated the 'Tipulidae brevipalpi' to 6 sections based on a combination of characters taken from: the number of submarginal cells, the number of antennal joints, the presence or absence of spurs at the tip of the tibiae, and the position of the subcostal cross-vein. The first submarginal cell is now called cell r2 between veins R_{2+3} and R_{4+5} and the second submarginal cell is now called cell r3, between veins R_3 and R_{4+5}. We now describe the Radial veins and their divisions, instead of the spaces between, ie the cells.

NB. Some non-European genera are included in the lists below. These sections were:

Section I. Limnobina - A single submarginal cell **(cell r2 between veins R_{2+3} and R_{4+5}) ie vein Rs forked once to separate veins R_{2+3} and R_{4+5}.** Antennae 14-jointed**. -** *Dicranomyia, Geranomyia, Rhipidia, Limnobia, Trochobola.* (Now Limoniinae)

Section II. Limnobina anomala - A single submarginal cell, Antennae 16-jointed. The first longitudinal vein ends in the costa ; tibiae without spurs at the tip – *Rhamphidia, Elephantomyia, Toxorrhina, Dicranoptycha, Orimarga, Elliptera, Antocha, Atarba, Teucholabis, Thaumastoptera.*

Section III. Eriopterina – Two submarginal cells. **(cell r_2 between veins R_{2+3} and R_{4+5}, and cell r3 between veins R_3 and R_{4+5}) ie Vein R_2 and R_3 forked to give a second marginal cell.** Tibiae without spurs at the tip. *Rhypholophus. Erioptera, Trimicra, Chionea, Symplecta, Gnophomyia, Psiloconopa, Goniomyia, Empeda, Cryptolabis, Cladura.* (Now Chioneinae)

Section IV. Limnophilina - Two submarginal cells. Antennae 16-jointed. Subcostal cross-vein posterior to the origin of the second longitudinal vein. Tibiae with spurs at the tip. *– Epiphragma, Limnophila, Ulomorpha, Trichocera* (Winter Gnats). (Now Limnophilinae)

Section V. Anisomerina - Two submarginal cells. Antennae from 6- to 10-jointed . Subcostal cross-vein posterior to the origin of the second longitudinal vein. Tibiae with spurs at the tip. *– Anisomera, Cladolipes, Eriocera, Penthoptera.*

Section VI. Amalopina - Two submarginal cells. Subcostal cross-vein anterior to the origin of the second longitudinal vein, tibiae always with spurs at the tip. **Eyes pubescent**. - *Amalopsis, Pedicia, Ula, Dicranota, Plectromia, Rhaphidolabis.* (Now Pediciidae)

The 'hairy eyes of the current family Pediciidae were observed by Latreille in 1809 but the pediciids remained a Section (Amalopina) in the short-palped craneflies until it was made a first a tribe within Limoniidae and then a sub-family, Pediciinae, It was finally elevated to family status (Pediciidae) by Starý in 1992.

Section Vll. Cylindrotomina - Antennae 16-jointed. The first longitudinal vein is incurved towards the second and usually ends in it ; tibiae always with spurs at the tip.- *Cylindrotoma, Triogma, Phalacrocera*

Table (Key) for determining the Sections

4. Antennae 14- (sometimes apparently 15-) jointed.	**Section I. Limnobina**
5. Antennae 16-jointed. The first longitudinal vein ends in the costa ; tibiae without spurs at I the tip.	**Section II. Limnobiua anomala**
The first longitudinal vein is usually incurved towards the second and ends in it ; tibiae always with spurs at the tip.	**Section Vll. L Cylindrotomina**
6. Tibiae without spurs at the tip.	**Section III. Eriopterina**
Tibiae with spurs at the tip.	- 7
7. Subcostal cross-vein posterior to the origin of the second longitudinal crossvein	- 8
Subcostal cross-vein anterior to the origin of the second longitudinal, vein	**Section VI. Amalopina**
8. Antennae 16-jointed	**Section IV. Limnophilina**
Antennae from 6- to 10-jointed	**Section V. Anisomerina**

Osten Sacken then continues the Monograph with a key to the genera and species in each section. Darwin published his 'Origin of Species' in 1858 and some ten years later Osten Sacken wrote:
The aim of all classification is to increase our knowledge of the structure of organic beings by illustrating their natural relationship. *If the natural relationship of some organic form be obscure, we may, for the sake of convenience, locate it provisionally on account of some artificial character ; but this provisional state has to cease, as soon as the true relationship is found out.*
He designated the Limnobina anomala as one such artificial group.

Some more Biography

[A detailed and very interesting biography by C.P. Alexander, available to download from Catalogue of Craneflies of the World (CCW. Oosterbroek, P.) and is highly recommended.]

Born in 1828 into a family of Rusian aristocrats, Baron Osten Sacken went as a Consular official to Washington, USA in 1856 and from then onwards, the craneflies of North America occupied much of his attention. He had a clear vision and was evidently a very effective project manager, organising collectors from across the USA, and working closely with Hermann Loew in Germany, then the foremost expert on Diptera, from 1850 until Loew's death in 1879. He was supported by the newly-formed Smithsonian Institute who published the first 3 volumes of Monographs of North American Diptera authored by Loew, and then in 1869, Vol. IV, authored by Osten Sacken, which dealt with the craneflies. He returned permanently to Europe in 1877. He published a total of 179 papers in total during his lifetime. Apart from autobiographies, the last paper that I know of was in 1897. He died in Heidelberg in 1906.

George Verrall (1848-1911) made a major contribution to the study of British craneflies, (Kramer 2022. Pont 2011) but as we follow in his footsteps so he followed in the footsteps of predecessors. Perhaps the most important of these was Baron R. J. Osten Sacken.

George Verrall, who had clearly studied his work, wrote as follows in an obituary to Osten Sacken, (Verrall, 1906):

"Probably no entomologist was ever more 'thorough' in his work. His bibliographical collection on Dipterology was unrivalled, and his was not merely a Library but notes were made by him from every work, so that he practically never missed a record of what had been previously written ...(He was an) absolute master of almost every European language; possessor of adequate means to associate in any company; of noble birth, which would give him admission to any rank of society; of diplomatic training which produced the most polished manners; all these qualities combined with an exceedingly retentive memory which he helped by detailed notes and exact observations, produced such a Master of Dipterology as we shall probably never see again.
Coming from George Verrall that was praise indeed.

From the eulogy above it would be surprising if Verrall did not have a copy of the 'Monograph' in his own library. Collin gave some items from this library to the Oxford Museum but when checked by Adrian Pont, the OUM copy of the 'Monograph'did not have the Verrall book plate in it. (Interestingly, there were 2 small annotations which seemed to be written by OS). The vast majority of the the Verrall-Collin library was purchased by E.C. Zimmerman and ended up in the library of CSIRO Canberra. (Adrian Pont. Pers. Com.)

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John Kramer

AGM Genitalia Preparation Workshop - NHM November 2022

Kit & Chemicals. It seems quite difficult to obtain the chemicals need to carry out genitalia preparations and a suggestion was made by Jenni Wilding that a 'starter pack' for the preparation of Diptera genitalia could be provided. Some of you may remember the very useful service that David Henshaw provided us before his retirement when he bought chemicals such as ethanol, ethyl acetate and potassium hydroxide pellets from suppliers, and sold them in small amounts to DF members. In these days of the internet it may not now be necessary, but if you would find this useful can you please let me know via email.

Cranefly Storebox.

Following the workshop, Martin Grenland from Norfolk sent me this solution to the problem of storage of large tipulid specimens. He writes: 'The specimens are carded on pieces 50mm wide x 55mm high and then stored vertically in a a wooden 35mm slide box bought on e-bay. Martin writes, 'it leaves plenty of room for thespecimen. So far it is working well and saving a lot of space.'

Like the storage of microscope slides, it makes a very compact way of storing a reference collection and it is easy to wrap and put into a domestic freezer to keep it pest-free.

Thanks to all who contributed articles or ideas. The next copy date for Issue #41 is is June 21st, 2023.

Small Acalypterate Families

Recording Scheme & Projects

Newsletter 2 Spring 2023

Founded June 1999 by Darwyn Sumner

Dryomyza anilis photo ©Darwyn Sumner (prefers dung to the fungi shown)

A brief history

A little late for a newsletter of a scheme formed 24 years ago but activity has been on hold until the time was ripe.

A few things occurred within the last couple of years to make the reanimation of this scheme feasible. Firstly the publication by Nigel Jones of a guide to one of those Families in the Bulletin: Piophilidae in Bulletin 89. Secondly the transfer of Steve Falk's historic records from BRC to Dipterists Forum whereupon several teams began to extract records for use in their Recording Schemes and upload to NBN Atlas as Open Data. Thirdly the opportunities offerred by iNaturalist to help gather records from photographs.

Why is this the second newsletter? Simply because the pages of the last couple of Bulletins have been packed with a number of background articles as we began to revive this Recording Scheme in the form of a number of projects. To get our chronology correct those will be bundled together into Newsletter 1, not reprinted, just as an online version, and not compiled with any degree of urgency.

Recording Scheme - News

A fourth project has now been added, Steve Falk having given the thumbs-up to the Dryomyzidae. Pictures are gradually accumulating on our iNaturalist site and records are beginning to appear on the NBN Atlas due to the work of the team organising these projects. Finally we've done some research tracking down published keys and guides as Open Access downloads to most of these little Families. A few clicks on the hyperlinks in this newsletter and you've got a nice library.

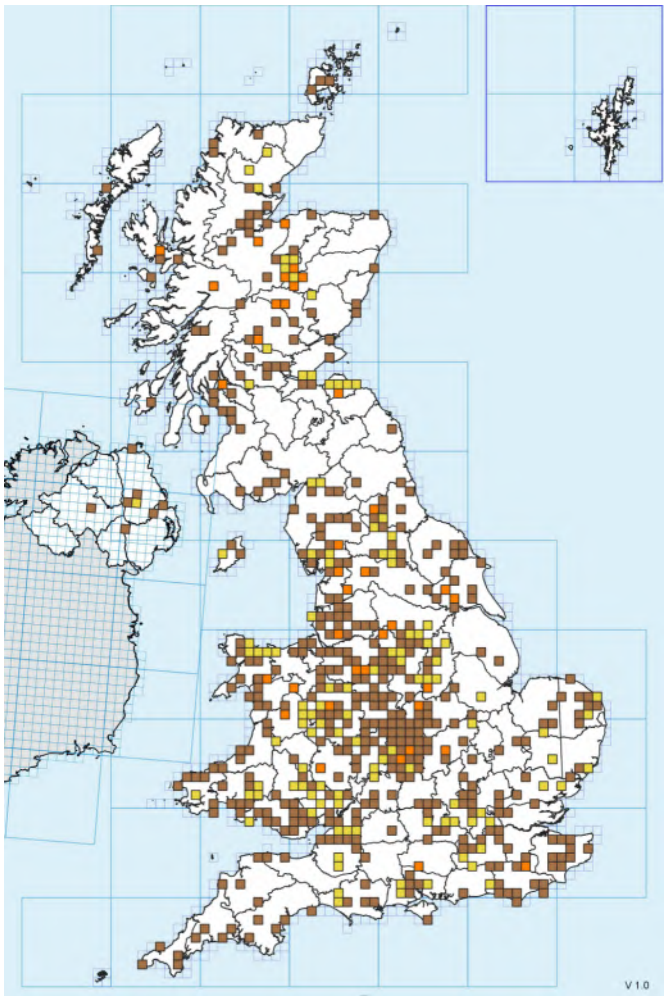
Adding more projects to the scheme

Expertise in each of these families is only to be found in the hands of a variety of different dipterists. As each expert comes forward to volunteer to deal with that family **plus** someone prepared to act as verifier so then a further project will be added to the current 4. Hopefully this initative will stimulate more to come forward but it may well take decades before they're all addressed fully.

Bones, birds & bees

A very odd bunch when bundled all together. They vary from the big obvious *Dryomyza* which is attracted to fungi as they melt away in the autumn through to some quite tiny pretty flies such as *Amoena*. Some avoid the regular techniques that dipterists employ to catch flies by hanging around bones (Piophilidae) sap runs (Aulacigatridae, Periscelididae) or birds (Carnidae) and bees (Braulidae) and as a result may be considerably under-recorded.

Dryomyzidae Open Data 2022



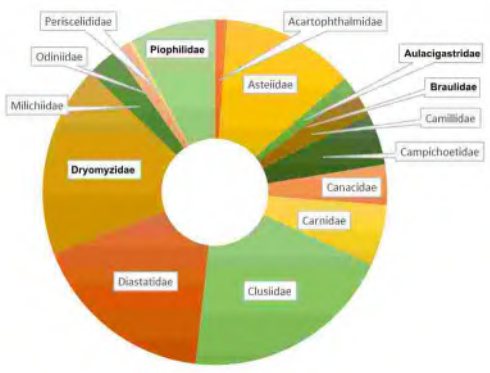
Dryomyza anilis {dark brown}, *Dryope luteola* {tan} and *Dryope decrepita* {orange} (overlapping). One possible pattern is altitude for the latter two.

Map generated in QGIS using Rich Burkmar's FSC tools

Contact the Recording Scheme if you've any more or simply add them to iRecord.

Small Acalypterate Families (UK) at https://www.inaturalist.org/projects/smaller-acalypterate-families

Open Data: UK



NBN Atlas holdings for each Family ~6,500 records

Verification

The BRC uploaded a dataset to the NBN Atlas consisting of unverified records. It's a mixed bag of all sorts of records from a wide variety of Families not covered by Recording Schemes. Titled "Diptera records from iRecord for families not covered by a recording scheme" it contains some 70,512 records from 39 Families at https://registry.nbnatlas.org/public/show/dr2046

Our projects aim to verify the Small Acalypterate Families, our NBN dataset is at https://registry.nbnatlas.org/public/show/dr2704 and verified records from this scheme began to show up on that Open Data silo in December.

In addition there are numerous other datasets, both historic trawls and uploads of Dipterists Forum Field weeks which contain records of these Families and thus appear in any NBN Atlas search.

Flex your skills

Both iRecord and iNaturalist will provide an opportunity for you to attempt verification. The latter is a free-for-all, just join and try your hand. iRecord is more demanding but if you've expertise apply through BRC (+this scheme), it'll cope with multiple verifiers for the one group.

Up for grabs

The following list shows our progress, Families highlighted in dark green are up and running:

Family	spp	iNat	SJF	BRC	NBN	Scheme
Acartophthalmidae	2	0	0	11	74	Project
Asteiidae	8	6	131	132	655	Project
Aulacigastridae	1	1	1	1	47	Project - Darwyn Sumner
Braulidae	2	1	0	4	6	Project - Darwyn Sumner
Camillidae	5	1	141	20	151	Project
Campichoetidae	2	0	1	98	407	Project
Canacidae	11	1	19	20	238	Project
Carnidae	13	0	0	23	364	Project
Clusiidae	10	23	201	177	1267	Project
Diastatidae	6	2	262	233	1115	Project
Dryomyzidae	3	118	235	465	1284	Project - Steve Falk + DS
Milichiidae	19	6	0	23	192	Project
Odiniidae	9	1	0	13	97	Project
Periscelididae	4	0	0	1	21	Project
Piophilidae	16	8	154	94	520	Project - Nigel Jones

Columns show number of species in the Family (spp), iNaturalist records as images (iNat), Steve Falk's pre-2014 records (SJF), BRC's "*not necessarily verified*" records already added to NBN Atlas (BRC) and NBN Atlas totals (NBN).

Numbers on pale red give some indication as to the volume of records awaiting attention, those on pale green are already Open Data.

Opomyzidae, though they don't strictly qualify as small in terms of number of species are included in the iNaturalist project.

The expertise of European workers would be most welcome

Project Dryomyzidae NEW

Steve Falk joined us in Autumn 2022, it was his original idea to treat each Family as a "project" allowing us to explore the situation regarding the availablity of keys and data before adding them to the Recording Scheme.

Steve is currently active on iRecord, uploading his more recent material. His historic records have been the subject of a Dipterists Forum project to digitise his pre-2014 records from scans of hand-written folders (Recording Scheme teams have been working on a variety of other Families from these, including Sciomyzidae, Conopidae & Anthomyidae). The extracted records of some 235 Dryomyzidae were submitted to NBN in October.

"*All those dryomyzid records should be accurate and ready to upload.. Had no idea I'd generated so many and I have more* decrepita *records from the Scottish Highlands to add but I've got a big Scottish dataset to submit this winter based on the trip Nigel Jones and I made last year so they will get into the system soon*"

Steve also directs us to images on his Flickr site at https://tinyurl.com/2ejf7sxb where you will find his key and links to a range of additional resources as well as images of all three of our UK species (with the correct names.)

Dryope decrepita female [Steve Falk on Flickr]

Dryope flaveola [Rui Andrade on iNaturalist]

Contacts:

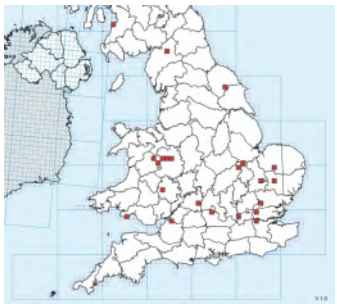
Technical and identification topics only to Steve Falk, records enquiries (iRecord, iNaturalist etc.) to Darwyn Sumner

Nomenclature

For this holarctic Family with only 3 UK members, there have been a surprising number of name changes. Expect to find (some of) the following used on various systems, accepted names are highlighted in green.

UKSI	NBN	GBIF	iNaturalist
Neuroctena anilis		***Dryomyza anilis***	
Dryomyza decrepita		***Dryope decrepita***	
Dryomyza flaveola	***Dryope flaveola***		

Project Aulacigastridae



Aulacigaster leucopeza

All records, regardless of verification status or imprecise grid references.

Clearly it is very rarely encountered. Get up close to any sap runs you find for a chance at this one. Worth a "eureka!" and a note for Dipterists Digest if you get lucky.

After you've popped it on iRecord and/or iNaturalist of course.

Project Braulidae

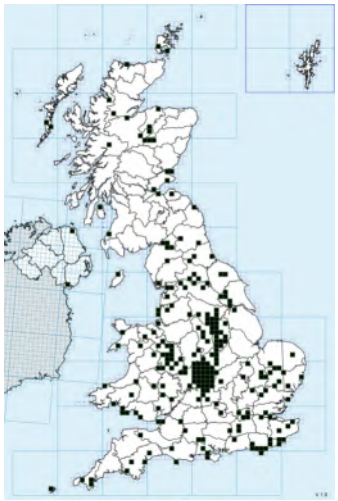
The specimen of *Braula coeca* recently posted on iNaturalist occasioned Murdo MacDonald to research and submit an article to Dipterists Digest. He kindly sent me a preview:

MacDonald, M. (2023). The Bee-louse Braula (Diptera,Braulidae) in Scotland. Dipterists Digest, (submitted), 1–9.

A thorough and extensive treatment of the subject. Tasks remaining now are researching historic records for the rest of the UK from the beekeeping community and other literature and flagging any new records infrequently submitted. Specifically, the NBU database referenced in Dobson, 1999 is sought, though it is anticipated that difficulties regarding precise locations (and consequently production of a UK distribution map) will be encountered due to the methods used to monitor their widely dispersing hosts.

Project Piophildae

Nigel Jones began this project in Bulletin 89 (p14) as a guide



Recording effort

The entire records of all the UK Piophilidae on file.

This map shows the regions where recording is most focussed due to the activities of certain recorders notably Steve Falk in Warwickshire. To the west Nigel Jones and to the north through Leicestershire and Nottinghampshire and into the Sorby region the efforts of others. Scattered patches elsewhere may be from expeditions, either those of Dipterists Forum during their field weeks or to favourite spots such as the Spey, Breck or south east coastal regions.

Nigel continues to work on these 16 species, for maps of individual ones consult the NBN Atlas Open Data, for new records just put them on iRecord or iNaturalist and for identification issues have a word with Nigel.

Keys & resources

Some of these can be found in Dipterists Digest and thus available on the Dipterists Forum website at https://dipterists.org.uk others from elsewhere as detailed below. They are all Open Access, use the hyperlinks to obtain them directly.

Diptera Families

Ball & Ismay: Available to Dipterists Forum members on DF website.
Unwin, 1981

Aulacigastridae

Roháček, J. (2013). The fauna of the Acalyptrate families Micropezidae, Psilidae, Clusiidae, Acarto phthalmidae, Anthomyzidae, Aulacigastridae, Periscelididae and Asteiidae (Diptera) in the Gemer area (Central Slovakia): supplement 1. Časopis Slezského Zemského Muzea Opava (A), 62, 125–136. https://doi.org/10.2478/cszma-2013-0014

Hagenlund, L. K. (2017). First record of Aulacigaster pappi Kassebeer , 2001 from Norway (Diptera, Aulacigastridae). Norwegian Journal of Entomology, (December), 2013–2016.. https://tinyurl.com/bddw37ns

Rung, A., & Mathis, W. N. (2011). Revision of the Genus Aulacigaster Macquart (Diptera: Aulacigastridae). (July 2015). https://doi.org/10.5479/si.00810282.633

Braulidae

Dobson, J. R. (1999). A "Bee-louse" Braula schmitzi (Diptera: Braulidae) New to the British Isles, and the Status of Braula spp. in England and Wales. British Journal of Entomology and Natural History, 11, 139–148. https://tinyurl.com/bdfzsubt

Parmentier, T. (2020). Guests of Social Insects. (December 2019). https://doi.org/10.1007/978-3-319-90306-4

Dryomyzidae

Falk, S. (2005). The identification and status of Dryomyza decrepita Zetterstedt (Diptera, Dryomyzidae). Dipterists Digest, 12, 7–12. https://tinyurl.com/262vbw8a

Piophilidae

Stubbs, A. and Chandler, C. 2001. A provisional key to British Piophilidae (Diptera) and Parapiophila flavipes (Zetterstedt, 1847) new to Britain. Dipterists Digest 2001, 8, 71-78 https://tinyurl.com/3t5452xc

One of the tasks for organisers of this Scheme is to hunt down identification keys, the following may be of value to those interested: [full references & links tbd]

Acartophthalmidae

Ozerov, A. L. (1986). "Review of the family Acartophthalmidae (Diptera) with description of a new species". Zoologicheskii Zhurnal. 65: 807–809 [Russian] [unavailable as Open Access]

Asteiidae

Online Key to Asteiidae

Chandler, P. J. (1978). A revision of the British Asteiidae (Diptera) including two additions to the British list. Proceedings of the British Entomological and Natural History Society, 11, 23–34.https://tinyurl.com/3d9wpf73

Gibbs, D., & L. Papp, 2007. A review of the Holarctic species of Leiomyza Macquart, 1835 (Diptera: Asteiidae) with descriptions of two new species. - Studia Dipterologica 13(2)(2006): 241-248. [unavailable as Open Access]

Asteia amoena [Marie Lou Legrand, France on iNaturalist]

Camillidae

Beuk, P., & de Jong, H. (2015). De Nederlandse soorten van de Camillidae (Diptera). Entomologische Berichten, 54(1), 1–6. Retrieved from https://tinyurl.com/4rv3vuu5 [Dutch]

All western European species are keyed

Campichoetidae

Chandler, 1986, The families Diastatidae and Campichoetidae (Diptera, Drosophiloidea) with a revision of Palaearctic and Nepalese species of Diastata Meigen [unavailable as Open Access]

Canacidae (beach-flies)

Collin 1966, Irwin et al 2001

Munari, L. (2011). The Euro-Mediterranean Canacidae s.l. (Including Tethinidae): Keys and Remarks to Genera and Species (Insecta, Diptera). Bollettino Del Museo Di Storia Naturale Di Venezia, 62, 55–86.

Carnidae (bird-flies)

Collin 1930, 1937

Jens-Hermann Stuke knows this group

Clusiidae

Stubbs, A. E. (1982). An Identification Guide to the British Clusiidae. Proceedings of the British Entomological and Natural History Society, 15, 89–93. https://tinyurl.com/ycxvujfv

Withers, P. (1985). Notes on some British Clusiidae and reduction of Clusiodes facialis (Coll.) to synonymy. Proceedings of the British Entomological and Natural History Society, 18, 63–64. https://tinyurl.com/wae55u7w

Diastatidae

Chandler, P. J. (1987). The families Diastatidae and Campichoetidae (Diptera, Drosophiloidea) with a revision of Palaearctic and Nepalese species of Diastata Meigen, Insect Systematics & Evolution, 18(1), 1-50. doi: https://doi.org/10.1163/187631287X00016 [unavailable as Open Access]

Milichiidae

MS key by Chandler - on request

Odiniidae

Collin 1952;

Cogan 1969;

MacGowan, I., & Rotheray, G. E. (2002). A new species of Odinia (Diptera, Odiniidae) from Scotland. Dipterists Digest Second Series, 9, 67–69. https://tinyurl.com/53d8y9j6

MacGowan et al, 2004

Opomyzidae

Drake, C. M. (1993). A Review of the British Opomyzidae (Diptera). British Journal of Entomology and Natural History, 6, 159–176. Retrieved from https://tinyurl.com/4bee4z9k

Two further publications on Opomyzidae by Martin are to be found on ResearchGate

Periscelididae

Duda 1934

Mathis, W. N., & Rung, A. (2011). World Catalog and Conspectus on the Family Periscelididae (Diptera: Schizophora). MYIA, 12(February 2014), 341–377. Retrieved from https://tinyurl.com/ycp953up

Good background reading; try sap runs

Irwin, A. G. 1982. A new species of Stenomicra Coquillett (Diptera, Aulacigastridae) from Anglesey, North Wales. Ent. Mon. Mag. 119(1420-1423): 235-238

Thanks to Peter Chandler for providing an outline of the above keys, Tony Irwin, Alan Stubbs and Martin Drake for advice and encouragement. BENHS papers were downloaded from BHL and stored on a Scratchpad site for ease of download.

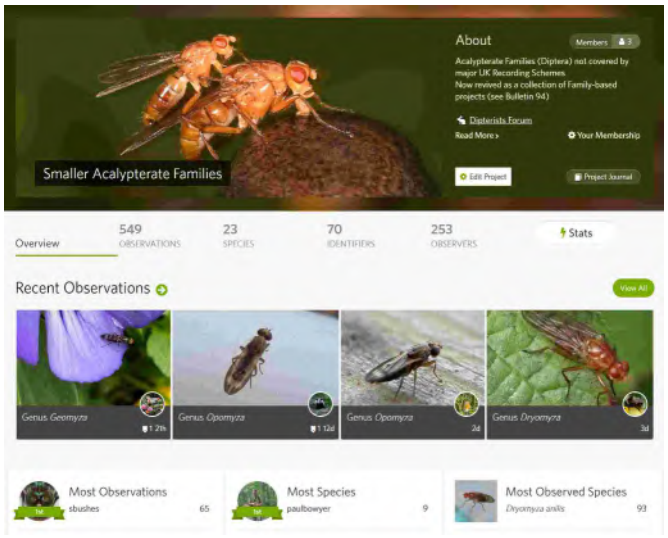
Authors of papers from journals not typically making their material available as Open Access may consider uploading to ResearchGate, though do follow their guidelines on copyright.

Potential progress

A number of keys have been compiled on Online-Keys.net following the traditional couplet pattern, allowing for prints to be made of them. For researchers interested in developing their own, Field Studies Council's Identikit system will facilitate the development of online keys using spreadsheet tables of characters (example)

For the development of comprehensive research sites (taxonomy, bibliography etc.) the NHM's Scratchpad system is used by several Dipterists Forum Recording Schemes, some covering Europe and further afield. Setting one up for the above would be feasible / desirable but quite demanding for a single person; expressions of interest would therefore be welcome.

iNaturalist project



For the photographers, be they casual or dedicated, this Scheme has an iNaturalist project. Simply a filter on the photographs that naturalists have uploaded onto the site.

At its simplest level it acts as a gallery of the most popular flies but it also serves to indicate which of our dipterists are the most keen on looking out for these Families whilst armed with a camera.

If you've any expertise at identification then it's a simple matter to sign up and identify them. So far 78 of those 549 have been confirmed.

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

Those submitting images would be glad of the identification, as I was with my first *Dryomyza anilis*. I keep trying to find a Piophilid to get one of mine on that site, so far without success but one day I'll find an attractive pile of bones.

iNaturalist to iRecord to NBN Atlas

The records on iNaturalist drift in to iRecord of course. Anyone set up with BRC to verify a specific Family will see the ResearchGrade (confirmed) ones lined up for expert scrutiny after which they'll sail through iRecord's more scrupulous verification system to end up as quality Open Data on the NBN Atlas.

Verifiers: So far on iRecord we've Nigel Jones verifying the Piophilidae, me doing the Aulacigastridae & Braulidae and Dryomyzidae (under supervision.)

If you've an interest or expertise in any of the other Families (see the above list) then drop a line to me and Martin Harvey to set you up as an iRecord verifier.

My quick video guide at https://tinyurl.com/5cenz3b4 shows how and there's a whole batch of detailed instructions on the iRecord site.

Dipterists Forum Recording Schemes

Soldierflies and Allies Recording Scheme

Newsletter 9, spring 2023

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

Orange-horned Green Colonel, Odontomyia angulata*, one of several individuals seen during the Dipterists Forum summer field meeting in Norfolk, July 2022. Photo by Martin Harvey.*

Welcome to another recording scheme newsletter. Unfortunately it was not possible to produce a newsletter in 2022, but having skipped a year we are back for 2023. Included in this issue are some natural history notes for various species, updates on recent records, and a longer article describing some taxonomic detective work within the snipefly family, Rhagionidae.

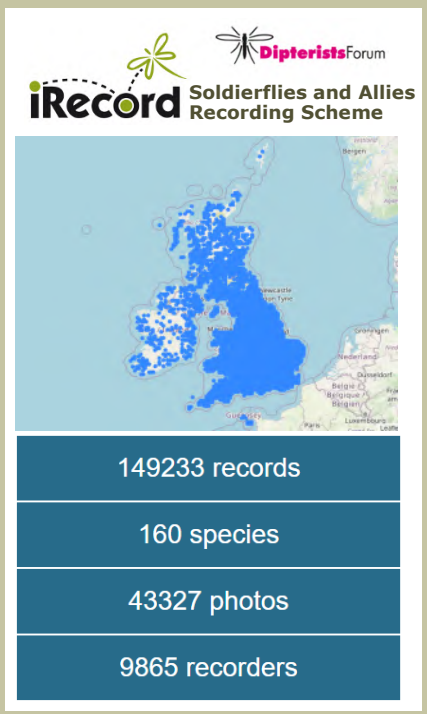
Many thanks to the authors, photographers and recorders who have contributed to this issue.

Sending in records (with some notes for iNaturalist users)

The recording scheme welcomes records for any of the species included in our eleven families, whether just one records or thousands, for one species or many, new or old. The preferred route for sending in records to the scheme is via **iRecord** or by sending in spreadsheets. iNaturalist is not a preferred option, because it doesn't link well to UK species names and grid references, and we are not able to provide feedback in the same way we can on iRecord. However, if you do use iNaturalist your records will reach the scheme, and you can help us by following these guidelines where possible:

- Choose an open licence for your records: CC0 or CC BY will enable your records to be used as widely as possible; CC BY-NC (non-commercial) can prevent records being used by some schemes and records centres. Other licence choices (such as SA and ND) are difficult to interpret for individual records, and cannot be used in iRecord or the NBN Atlas (nor on GBIF). (Note that the choice of licence for your photos is up to you and is separate to the record licence.)
- Provide your real name if possible; this can be added as the "Display name" in your iNaturalist profile, and will then be used as the recorder name on iRecord.
- Avoid obscuring locations unless absolutely necessary, as this can prevent them being linked to grid references of suitable precision for recording scheme use.
- Records on iNaturalist are imported into iRecord, so it is helpful if you can avoid adding the same record to both iNaturalist and iRecord, to avoid duplication of both records and of verifiers' time.

Further details are available on the recording scheme website.



Red-legged Robberfly *Dioctria rufipes* (Asilidae) courtship

by Martin Drake

Dioctria rufipes mating. Photo Andy Brown.

The courtship described by Parmenter (1952) for *Dioctria* (no species named) was similar to his later description for *D. baumhaueri* Meigen and Melin's (1923) for both *D. rufipes* (De Geer) and *D. hyalipennis* (Fabricius), but different from Parker's (1995) for *D. cothurnata* Meigen. It is unclear what species formed the basis of Parmenter's 1952 account but I saw exactly this behaviour by *D. rufipes* in my Devon garden.

At 9:00 in the morning on 14 June 2020, when the sun was coming and going after an overcast and drizzly start to the day, a male was swinging back-and-forth in an arc of about 120°, some 10-15cm in front of a female that was sitting on a leaf of meadowsweet (*Filipendula ulmaria*), and always facing her. After about 10 swings, he quickly flew to her and coupled, but I was not paying enough attention at the final moment so cannot say what happened after that as I was distracted by a potential mating of *Chrysopilus cristatus* (Fabricius). *Dioctria rufipes* is a frequent fly in this damp part of the garden that resembles a wet meadow.

References

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Flowers visited by Western Bee-fly *Bombylius canescens* (Bombyliidae)

by Martin Drake

Bombylius canescens visiting a *Veronica* flower. Photo John Lyden.

Stubbs & Drake (2014) mention a few flowers visited by *Bombylius canescens* Mikan but there appears to be little published information on the range that it uses. This spring I watched several individuals on 7 days between 26 May and 16 June in my East Devon garden and neighbouring countryside, the first I'd seen here for a few years. An unfortunate individual that died in the house allowed its identity to be confirmed. Germander Speedwell (*Veronica chamaedrys*) was a favourite (Stubbs & Drake mention Heath Speedwell), with visits to this plant on five of the seven days. One fly spent many minutes going systematically from flower to flower in a patch with about 100 flowers. A large area of Common Chickweed (*Stellaria media*) was also searched systematically for many minutes, and this fly showed no preference for diverting to the speedwell that was mixed in with the chickweed. This fly did approach and quickly reject several Red Deadnettle (*Lamium purpureum*), which is normal behaviour as flies don't like closed flowers, so seeing a bee-fly at Bush Vetch (*Vicia sepium*) was unexpected; this was not just a single accidental probing but several flowers were visited. Also unexpected was Common Daisy (*Bellis perennis*) in the lawn, a flower

used relatively seldom by flies considering its ubiquity. Stubbs & Drake mention Herb-Robert (*Geranium robertianum*) being visited, and I can confirm this and add Shining Crane's-bill (*G. lucidum*) of which several flowers were visited. A quick dash to Red Campion (*Silene dioica*) was probably a mistake in one fly's search for Herb-Robert growing with it.

As usual with bee-flies, this behaviour suggested a wide diet but also a degree of selectivity at a time when there is an abundance of flowers to choose from. It is possible that feeding while hovering allows them to use a resource of tiny flowers that is under-used by flies and bees of the same size as *B. canescens*, since landing on these small flowers was clearly a cumbersome activity for, say, *Platycheirus* hoverflies.

References

- Stubbs, A.E. & Drake, C.M. 2014. *British soldierflies and their allies*. British Entomological and Natural History Society. Second Edition. 528pp.

Black-legged Water-Snipefly *Ibisia marginata* (Athericidae) found in Perthshire

by Robert Wolton

On 12 June 2021, while sweeping vegetation around a large shingle bank besides the River Earn, near Comrie in Perthshire (NN790216), I caught two individuals of this species. The NBN Atlas (and Soldierflies and Allies Recording Scheme) does not show any records further north in Scotland than Dumfries and Galloway, so this record near Comrie extends the known range considerably northwards, by some 130km. I also caught two Northern Silver-stiletto flies *Spiriverpa lunulata* on the same day on the site. To add further interest, there were signs of recent beaver activity.

Ibisia marginata from Comrie. Photo Rob Wolton.

House Windowfly *Scenopinus fenestralis* (Scenopinidae) reared from Jackdaw nest

by Robert Wolton

In February 2021 I cleaned out a barn owl box in a farm shed that had been used by Jackdaws the previous season, and after removing all the twigs almost filled a 15 litre white feed bucket with the debris. I covered this with netting and waited. Over the course of the summer quite staggeringly large numbers of White-shouldered House-moths *Endrosis sarcitrella*, Brown House-moths *Hofmannophila pseudospretella* and clothes moths *Tineola* spp emerged, and a few Skin Moths *Monopis laevigella*.

On 14 July four *Scenopinus fenestralis* appeared, followed over the next few days by a further six. Over more than ten years of being interested in flies, I have previously only seen two individuals on the farm, both on the internal surfaces of windows in our house (the fly in well named). Otherwise, in Devon it has been recorded only from Martin Drake's house on the other side of the county!

The association with a Jackdaw's nest is not unexpected since in the wild the natural home of the house windowfly includes birds' nests in hollow trees – among them those of Jackdaws as well as sparrows, swallows, starlings and pigeons (Stubbs and Drake 2014, *British soldierflies and their allies*). The larvae are thought normally to feed upon the larvae of "clothes" moths as well as those of carpet beetles and perhaps even of fleas. The only other flies to emerge from the bucket's contents were two *Hydrotaea*

armipes (a muscid) and one each of the heleomyzids *Tephrochlamys rufiventris* and *Heteromyza rotundicornis*.

If you have not come across windowflies, you might like to try collecting disused birds' nests from buildings, to see what emerges from the detritus.

My thanks to Andrew Cunningham for his excellent photo of one of the specimens from the Jackdaw nest.

An antennal enigma – are the snipe flies *Spania nigra* and *Archicera avarorum* (Rhagionidae) the same species?

by Robert Wolton

Male and female *Spania nigra* Meigen, 1830, have differently shaped antennae. I noticed this when looking at two females and a male reared from liverwort mats (see separate note in this newsletter) and confirmed it by looking at further specimens I have collected, both from our farm in Devon and from coastal cliffs in Norfolk near Cromer. This difference has been overlooked by some authors and researchers with the unfortunate consequence that the female may, in continental Europe, have been described as a separate species and even placed in different genus – *Archicera avarorum* Szilády, 1934! It's an intrigue that stretches back more than a hundred years and across seven European countries.

At the start of the last century Verrall (1909) recognised the difference in antennal shape between male and female *S. nigra* antenna, providing illustrations, as much more recently have Nagatomi and Saigusa (1982) (based on Japanese material and a female examined in the Natural History Museum in London). These works appear to have gone unnoticed by recent European workers. Even Alan Stubbs and Martin Drake's superb handbook *British soldierflies and their allies* (Stubbs and Drake 2014) does not remark on the difference, rather giving a description of antennal shape that fits the male better than it does the female. Something for a third edition to address, perhaps?

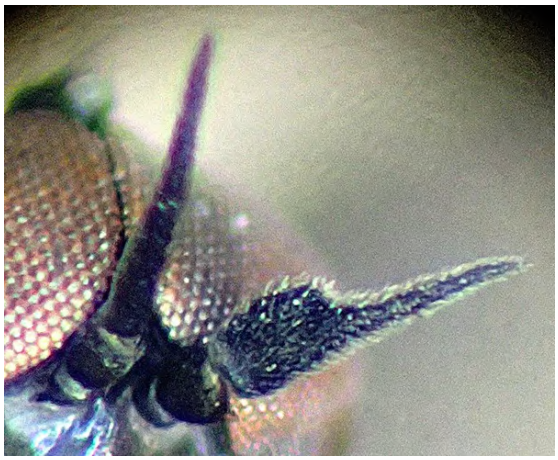
I'll start with a description of the antennae in *S. nigra* (see photos opposite and on Steven Falk's excellent Flickr site). The male antenna has a nearly rectangular third segment with rounded corners, the "arista"[1] arising from the lower front corner, its base occupying no more than half the distal end of the third segment. Unlike the first two segments, both arista and third segment are densely covered in short hairs, and the arista is 1.5 to 2 times the length of the third antennal segment: it is round in cross section. In marked contrast, in the female the third antennal segment is more rounded than in the male and the arista proportionally longer, 2.5 to 3 times as long. The arista is also laterally flattened, and in the specimens I have its base occupies two thirds, sometimes all, of the end of the third segment – indeed in several specimens it is difficult to see where the antennal segment ends and the arista starts (see the photo opposite). As in the male both third segment and arista are covered by short, but slightly longer, hairs. The flattened female arista tapers fairly evenly from its broad base to a fine tip. There is some variation in antennal shape, especially in the extent to which there is a step between third antennal segment and arista, but there remains a clear difference in arista between sexes in all the specimens I have to hand (5 males, 6 females). There is also a difference in palp shape between males and females,

[1] The "arista" should probably be called an arista-like stylus since in both males and females it appears separated from the third antennal segment (the first flagellomere or postpedical) and shows signs of annulation (i.e. division into several segments or further flagellomeres): some authors refer to it as a prolongation of the third segment. Together all the flagellomeres constitute the flagellum (Cumming and Wood 2017).

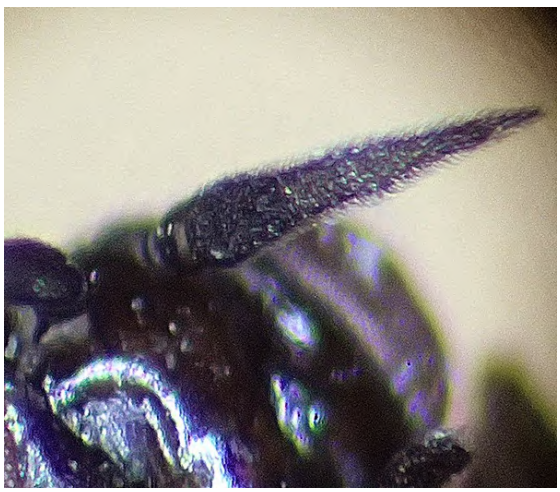
the females being broader and flatter and lacking long hairs at the tip, but that is of less relevance to the story in hand.

In 1934 Szilády described *Archicera avarorum* based on two females, one from Austria and the other from Croatia, held in the Természettudományi Museum in Budapest, Hungary. It is presumed they were collected before the First World War. In his brief account Szilády recognised the similarity to *Spania* but placed the specimens in a different genus on the basis of "their lancet-shaped antennae, the third segment of which showed incipient segmentation". I am grateful to Papp (2018) for providing this information and for reporting that the generic name reflects Szilády's view that the antennal form is a primitive feature, *Archicera* meaning ancient horn in Greek. The specific epithet refers to the Avars, ancient inhabitants of the Carpathian Basin prior to its invasion by the Hungarian tribes at the end of the 9th century. Unfortunately, the museum in Budapest burnt down in the 1956 Hungarian Revolution and the two syntypes were lost.

To this day, *avarorum* remains the only species in the genus *Archicera*. It appears to be very rare since it was not until 2017 that the next specimen was found, in Transylvania, Romania. László Papp at the new Hungarian Natural History Museum took the opportunity to describe it as the neotype (Papp 2018). It too was a female. Papp compared it with a male *Spania nigra* from Romania, apparently the only specimen of that species he had to hand. He does not remark upon any specific differences from *S. nigra*, noting that the wing venation is the same. However, he does provide a photograph of one of the antennae which clearly shows the arista to be similar in length and shape to that of female *S. nigra* as I describe above, if rather thinner than in any of my specimens. In his description of the "flagellomere" (encompassing my third antennal segment and arista) he notes that the longest, mid-part is subcylindrical, so flattened to some extent (the terminal part being a minute tip to the arista). If Papp had had a female *S. nigra* to hand or been aware of Verrall's (1909) or Nagatomi and Saigusa's (1982) descriptions and illustrations, would he have considered the specimen he described to belong to that species? I believe he may have. Sadly, László Papp died in 2021.



Spania nigra antennae, male above, female below. Both emerged 4 June 2021 from *Pellia* liverwort taken from wet woodland on Locks Park Farm, Hatherleigh, Devon. Photos Rob Wolton.



The next reported encounter with *A. avarorum* is from Brussels, Belgium. Here, Patrick Grootaert, Hugo Raemdonck and Alain Drumont caught 13 in Malaise traps set in the Botanical Garden Jean Massart in 2015 and 2017 (Grootaert *et al.* 2020). These were all females. Like Szilády and Papp before them, they infer that *A. avarorum* can be distinguished from *S. nigra* solely on antennal shape: all make the understandable but as it turns out false assumption that female *S. nigra* have similar antennae to the males of that species. Grootaert and his co-authors provide excellent illustrations of the left and right antennae of a single female from among their specimens, showing that variation can occur even within the same specimen: the shape of both is, however, well within the range of variation seen in the female *S. nigra* I have in my collection. It does seem probable to me that the specimens collected in Brussels are in fact female *S. nigra*.

Curiously, neither Papp's photograph nor Patrick, Hugo and Alain's illustrations show the segmentation in the

"arista" which I believe I can just see in my specimens and which Szilády originally reported. Perhaps this is an artefact of preservation means – my specimens were pinned and air dried from fresh material, those from the botanic garden preserved in alcohol.

The next part of the story completes the cycle of probable confusion. In Spain, Miguel Carles-Tolrá recently examined 1995 and 1996 Malaise trap catches from a forest in the north of the country (Carles-Tolrá 2021). Searching for rhagionids, he found not just a female conforming to *A. avarorum* but also two males which he took to be of the same species. Since these were apparently the first male *A. avarorum* known to science, he describes them in detail. His paper includes photographs of both male and female antennae – but they look identical to those of male and female *S. nigra* as far as I can judge. He also provides photos of the male genitalia, noting that the male surstyli appear identical to those of *S. nigra* illustrated by Kerr (2010). Carles-Tolrá does not make any further direct comparisons between the two species. His photo of the male genitalia does, however, reflect very closely the illustrations of *S. nigra* male genitalia provided by both Rozkošný and Spitzer (1965) and Nagatomi and Saigusa (1982). Carles-Tolrá notes that there is sexual dimorphism in the palps: the descriptions and photos reflect my own observations for *S. nigra*. Surely, all this confirms that *A. avarorum* is indeed the same species as *S. nigra*?

I am no taxonomist and may be quite wrong about this. Further close examination of male and female genitalia may help, but, as Patrick Grootaert has remarked to me, the only sure way we are likely to be able to tell if they are distinct species is by DNA sequencing. Do the bar codes differ?

Whether one species or two, should the flies be placed in the genus *Archicera* or *Spania*? Like László Papp, Patrick Grootaert and Miguel Carles-Tolrá I would not wish to comment on this – I am hardly qualified to do so! Papp (2018) quotes Akira Nagatomi and Toyohei Saigusa (in prep.) saying that the variation in antennal shape in *Archicera* is similar to that observed in *Spania* species (of which in addition to *nigra* there are a further three found in Japan), so *Archicera* is probably a junior synonym of *Spania*. The paper does not yet appear to have been published.

My thanks to Martin Drake, who had already noticed the difference in antennal shape between the sexes in *S. nigra*, for helpful discussions, references and comments on this note.

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Liverwort Snipefly *Spania nigra (Rhagionidae)* reared from the liverwort *Pellia epiphylla*

by Robert Wolton

Female *Spania nigra*. Photo Rob Wolton.

On 9 May 2020, to my surprise, a male of the tiny (2mm) rhagionid *Spania nigra* appeared in an emergence trap set in wet willow/ alder woodland on our farm in Devon (SS517014). Verrall (1909) and Stubbs and Drake (2014) refer to an 1896 account from mainland Europe, probably France, of a female being reared from a thallus of *P. neesiana*. After reading this, I examined the ground beneath the emergence trap and duly found a small mat of *P. epiphylla,* a very similar species to *P. neesiana*. A further two *S. nigra* were present in the trap when I next checked it, on 12 May.

To try and confirm the association with *Pellia*, in spring 2021 I scraped some mats of the liverwort's thalli off the woodland floor and placed them in a small bucket with a net covering. On 4 June three adult *S. nigra* emerged, a male and two females.

Thus, the association of the snipefly with *Pellia* in Britain is confirmed, and as conjectured by Alan Stubbs and Martin Drake, damp or wet woodland provides suitable larval habitat, in addition to coastal landslips and cliff runnels, and doubtless other habitats where the liverworts occur. The ground in our wet woodland is kept open by cattle grazing, providing plenty of bare soil suitable for colonisation by the liverwort.

My thanks to John Day for identifying the *Pellia*.

Recording scheme updates

Soldierflies and allies in the entomological journals

The following articles and notes have appeared in recent journal issues.

- Chandler, P.J. 2021. The two-winged flies (Diptera) of Windsor Forest and Great Park. *Dipterists Digest* 28 Supplement: 1–126. [Peter Chandler's masterful summary of the habitats and fauna covers all Diptera families, including soldierflies and allies.]
- Crowley, L. 2021. ***Pandivirilia melaleuca*** (Loew) (Diptera, Therevidae) recorded from Wytham Woods, Oxfordshire. *Dipterists Digest* 28: 250–251.
- Drake, C.M. 2022. Swarming behaviour of male ***Chrysopilus cristatus*** (Fabricius) and ***C. asiliformis*** (Preyssler) (Diptera, Rhagionidae). *Dipterists Digest* 29: 19–34.
- Edwards, B., and Foster, A.P. 2021. Further records of ***Villa cingulata*** (Meigen) (Diptera, Bombyliidae) from Dorset. *Dipterists Digest* 28: 163–164.
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Recording scheme updates

During 2021 the number of records sent in to the recording scheme was the highest ever, at just over 10,000 records, and for 2022 we have over 8,000 records so far, with more to come as further spreadsheets arrive and records are entered. One big job that was more-or-less completed in 2021 was the transfer of the bulk of the older recording scheme records into the iRecord database, so that nearly all of the recording scheme data is now available in one place for ease of use and checking. From iRecord the records are shared with the NBN Atlas (and updated monthly) for wider accessibility. Data from the recording scheme has been downloaded from the NBN Atlas over 5,000 times.

The combination of increased recording effort and range expansions for some species resulted in over 50 new vice-county records in 2021, and astonishingly another 50+ new VC records in 2022. Even Broad Centurion ***Chloromyia formosa*** was new to South Aberdeenshire, recorded by Graeme Reid in 2021.

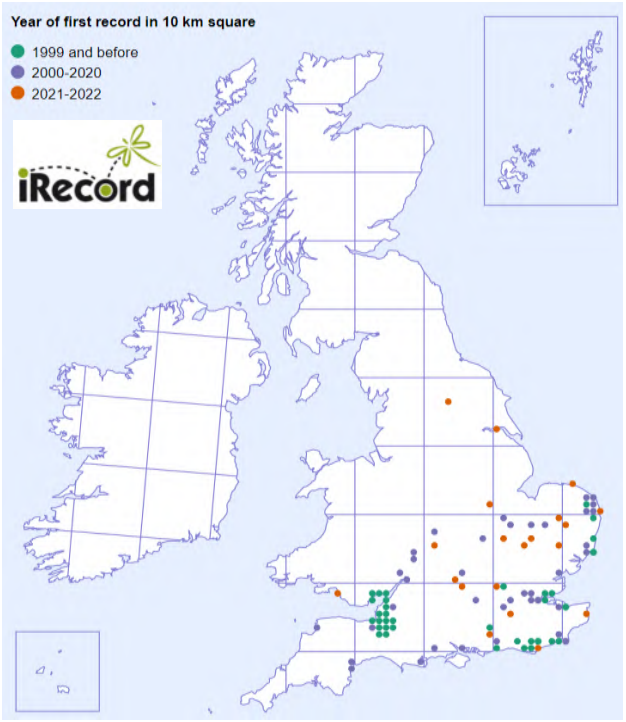
Bee-fly Watch ran again in spring 2021 and 2022, continuing to attract a wide range of people who clearly get a lot of enjoyment from watching and recording bee-flies. Probably the most significant records in 2022 were of Dotted Bee-fly, ***Bombylius discolor***, when Nick Bowles and Ian Carle made the first ever Hertfordshire records, and then Matthew Garnham recorded it in both East and West Suffolk, a new VC record for the former county, and the first records anywhere in East Anglia for about 100 years.

A number of other species have continued to expand their range, perhaps most dramatically in the case of the Ornate Brigadier soldierfly, ***Odontomyia ornata***. During 2022 there were new vice-county records in Berkshire (Brian Walker and John Bloomfield), West Norfolk (Gill Judd), North Lincolnshire (Darren Matthews), Leicestershire (Matthew Berriman) and Mid-west Yorkshire (Calum Paterson).

The related Silver Colonel, ***Odontomyia argentata***, also spread in 2022 with new VC records in Worcestershire (John & Denise Bingham) and Shropshire (Nigel Jones).

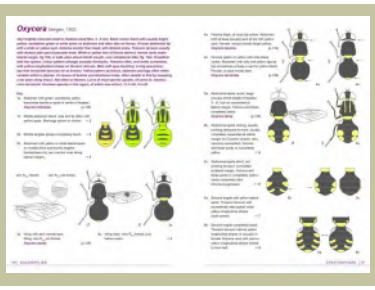
The Dipterists Forum field meetings produced some significant records in 2022. It was good to see Wood Snipefly, ***Rhagio annulatus***, in numbers at Wytham Woods during the spring meeting, making this the strongest known UK population for this widely-scattered but very rare species. And the summer field trip to Norfolk resulted in numerous records for rarer species including Orange-horned Green Colonel, ***Odontomyia angulata***, Levels Yellow-horned Horsefly, ***Hybomitra ciureai***, Big-spotted Cleg, ***Haematopota bigoti***, and Levels Cleg, ***Haematopota subcylindrica***.

Distribution of *Odontomyia ornata*, with orange dots showing the 10 km squares where this species has been recorded for the first time in 2021 and 2022 .



Field guide to flies with three pulvilli by Theo Zeegers & André Schulten

A fantastic new guide to seven of the soldierflies and allies families, with well-illustrated keys and species accounts. See the full review in the Dipterists Forum *Bulletin*. Available from NHBS (£14.99 + postage).



Striking it lucky twice in Norfolk Mark Welch

(1) *Thompson Common*

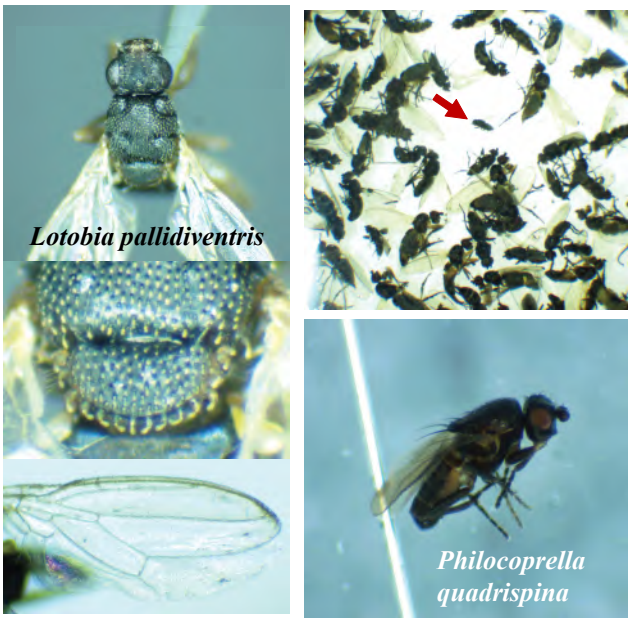
From mid-August to early September 2022 I made 3 visits to Thompson Common SSSI, the well-known pingo pools site in the middle of Norfolk. Its most famous denizen is Northern Pool Frog. Twenty years or so ago Ivan Perry was involved in a site assessment of Thompson Common for which he provided many records of Diptera. As the Diptera of this site have been little studied over the past decade I decided to pay a visit, particularly with a view to sampling smaller flies such as Sphaeroceridae and Phoridae. The warden informed me that seven Konik ponies had been on Compartment 7 for most of the summer and were still there - this info' provided a good focus for my efforts.

At Thompson Common short-sward, calcareous ramparts form a network between pingo pools . Photo MW.

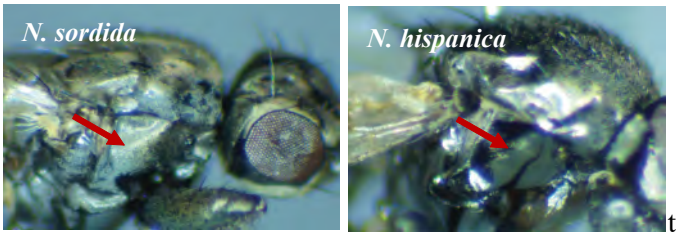
My visit on 17h August coincided with a recent mass emergence of *Lotobia pallidiventris*. a seldom-recorded species in the UK. This distinctive fly (photos on right) looks like a large *Ischiolepta*, but has 14-16 thick curved peg-like spines along the scutellar margin and a very different wing venation (the M vein curves up sharply to join the costa. In contrast to the many (200+) *L. pallidiventris* found, my three visits to Thompson Common produced only two *Ischiolepta* specimens - males of *I. pusilla* and *I. vaporariorum*, both usually common species.

Twenty-five species of LDF were recorded over the three visits, which included the minute *Philocoprella quadrispina* (17 specimens) and three species of *Norrbomia* (*costalis*, *sordida* and *hispanica*) which were found in numbers at pony dung. *N. hispanica* is a rarely recorded species in the UK. It is easily distinguished from *N. sordida* by having a very shiny undusted anepisternum, whereas in *sordida* it is heavily dusted (photos right). Both species are distinguished from *N. costalis* by having one pair of dorso-central setae, not three pairs. *N. costalis* also has a dusted anepisternum.

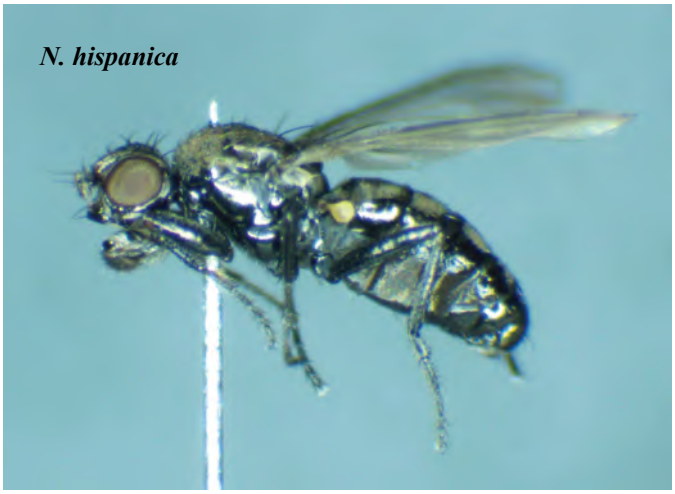
By far most common LDF collected at pony dung during the visits was *Coproica acutangula* (abundant). The six species of *Coproica* recorded included small numbers of the less frequent *C. lugubris* and *C. pusio*.



Left: *Lotobia pallidiventris* from TC. **Upper right**: Sifting a LDF catch from Thompson Common. The larger (3 mm) flies are mostly *Norrbomia* and *Alloborborus*. The very small (1mm) fly in the centre is *Philocoprella quadrispina*. **Lower right**: *P. quadrispina* with an AA pin for scale. Photos: MW



The anepisterna of *N. sordida* and *N. hispanica*. Photos: MW



The bonanza of *L. pallidiventris* at Thompson Common remains to be understood. Dave Brice and I will be studying the LDF fauna of Thompson Common further in 2023 and 2024 to try to tease out what makes it so attractive for these uncommon species. We thank Ivan Perry for making available much useful documentation relating to the site assessment he was involved in.

(2) *Watermill Broad, Cranwich* (TL777958)

My hymenopterist chum Nick Owens and I were invited to take a look around a privately owned nature reserve at Watermill Broad, near Cranwich, with a view to making follow-up visits to evaluate the potential for improving its value for invertebrates. This reserve (52 ha) is privately owned and its habitat management and monitoring are overseen by a board of trustees and undertaken by volunteers. Most of it comprises six large lakes fringed by willows and tall-herb borders. The underlying bedrock is Cretaceous chalk. There is a small field (2 ha) containing three shallow ponds with well-developed *Chara* Stonewort mats and patches of *Juncus* (photo below). With careful management this field could develop into a valuable calcareous fen.

We visited the reserve on 26.*viii*.2022 and were shown around by Tony Leech, a stalwart of the Norfolk & Norwich Naturalists Society and an expert on fungi. Towards the end of the visit I spent 30 minutes sweeping the muddy edges of one of the small ponds. In front of me a mature *Stratiomys* larva inched its way out of the pool into the bordering vegetation. Sweeping the margins produced many LDFs and several impressive males of the ephydrid *Ochthera mantis*.

The mud-fringed drawn-down pool at Watermill Broad where *Phthitia spinosa* was collected on 26th August 2022.

Sorting through the LDFs at home I found a very small (1.5 mm) female that, after dissection (abdomen only), keyed to *Phthitia spinosa*, a very rarely recorded species I had not met before. I sent photos of the head and dissected abdomen to Dave Brice, who tentatively agreed with the identification but asked if I could send him the specimen just to be sure it wasn't anything even more unusual. Dave contacted Ivan Perry who had found a male and a female *P. spinosa* at Chippenham Fen near Cambridge in 2016. The comparison was close, but more photos of the heads of both females and the dissected abdomen of Ivan's female were taken and sent to Jindrich Roháček for his opinion. He checked the few specimens in the Silesian Museum in Prague and confirmed that both specimens were *P. spinosa*. Apart from the original 1910 record of Collin (Burwell Fen, Cambs) and Ivan's pair, this is the only other UK record. The Welsh Peatlands Invertebrate Survey did not record *P. spinosa*, although *P. longisetosa* was found to be common. *P. spinosa* may, therefore, be a genuinely rare species in the UK. On 11.*ix*-14.*ix*.2022 I returned to the pond where *P. spinosa* was collected and deployed four white bowls of soapy water along the muddy fringe, but no further specimens were found. This summer I shall set some pitfall traps in the vegetation adjacent to the pool, as well as water traps, to see if more specimens are forthcoming.

What is there not to like? Minute, dark and cryptic. *Phthitia spinos*a from Watermill Broad, 26/08/22. Photos: Left (under alcohol): MW. Right: Dave Brice.

******

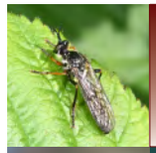
Papers on LDFs in press with *Dipterists Digest*:

Thoracochaeta lanx Roháček and Marshall 2000 (Diptera, Sphaeroceridae); the first new records for the UK since holotypes were collected in 1999. David Brice, Simon Hodge, Mark Welch & Andrew Cunningham.

This paper reports significant new records of a rarely recorded species of maritime LDF as part of an effort to understand the distribution and ecology of *Thoracochaeta* in the UK and Ireland.

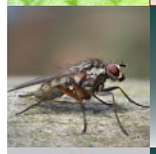
The lesser dung fly *Phthitia (Collimosina) spinosa* (Diptera, Sphaeroceridae) in East Anglia. Mark Welch & Dave Brice.

Dave Brice and Andrew Cunningham discussing, hands in pockets, the attractions of studying *Thoracochaeta* at Weston Mouth, S. Devon in May 2022. *T. lanx* was found there on the day by AC. Photo MW.



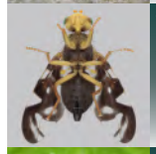
Soldierflies & Allies
Recording Scheme

Martin Harvey kitenetter@googlemail.com



Anthomyiids
Anthomyiidae Study Group

Phil Brighton
helophilus@hotmail.co.uk



Tephritids
Tephritid flies Recording Scheme

Laurence Clemons
laurenceclemons56@gmail.com

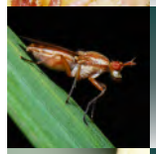
Conopids
Conopid Recording Scheme

with Lonchopteridae, Ulidiidae, Pallopteridae & Platystomatidae

David Clements dave.clements@ntlworld.com

Agromyzidae
Leaf-miner Recording Scheme

Barry Warrington agromyzidaeRS@gmail.com



Sciomyzids
Snail-killing flies Recording Scheme

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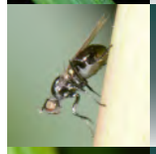
Darwyn Sumner darwyn.sumner@ntlworld.com



Sepsids
Sepsidae Recording Scheme

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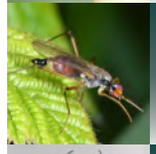

Micropezids & Tanypezids
Stilt & stalk-fly Recording Scheme

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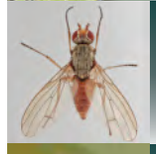
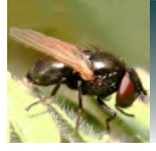


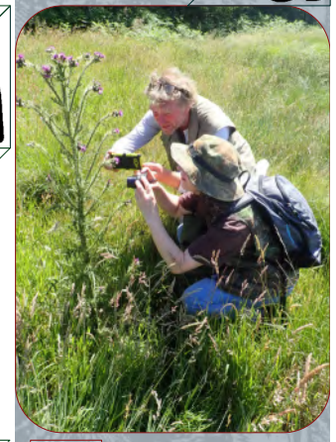
Heleomyzids
Heleomyzid Recording Scheme

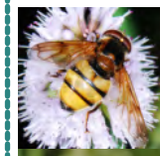
Ian Andrews syrphus@hotmail.co.uk



Lance-flies
Lonchaeidae Study Group

Nigel Jones nipajones@talktalk.net



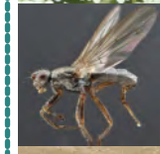


Hoverflies
Hoverfly Recording Scheme

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

Rhinophorids
Rhinophoridae Recording Scheme

Ryan Mitchell ryanmitchell1994@live.com

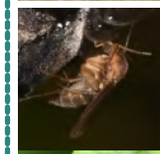


Coelopidae, Heterocheilidae, Helcomyzidae
Kelp-fly Recording Scheme

Donald Smith KelpflyRS@gmail.com

Culicidae
Mosquitoes Recording Scheme

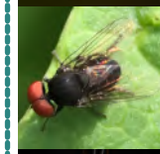
Jolyon Medlock jolyonmedlock@hpa.org.uk



Fungus Gnats
Recording Scheme

Mycetophilidae & allies

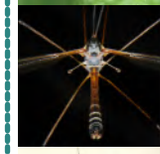
Peter Chandler chandgnats@aol.com



Flat-footed flies
Recording Scheme

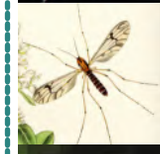
Platypezidae

Peter Chandler chandgnats@aol.com



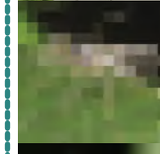
Craneflies
Cranefly Recording Scheme

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



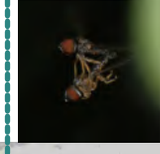
Dixidae & Thaumaleidae
Recording Scheme

Julian Small
julian.small@naturalengland.org.uk



Chironomids
Chironomid Study Group

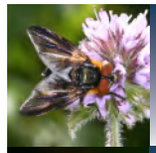
Patrick Roper patrick@prassociates.co.uk



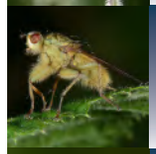
Pipunculidae
Study Group

David Gibbs DavidGibbs6@sky.com

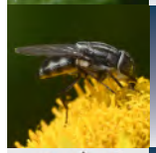
Dipterists Forum Recording Schemes & Study Groups



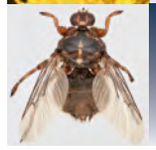
Tachinids
Tachinidae Recording Scheme
Chris Raper chris.raper@gmail.com
Matthew Smith MatSmith1@compuserve.com



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

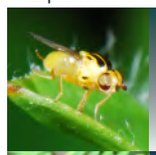


Calliphorids
Calliphoridae Recording Scheme
Olga Sivell aruma@wp.pl

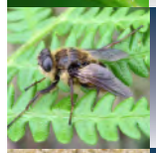


Hippoboscids & Nycteribiids
Ked, Louse & Bat-fly Recording Scheme
H: Denise Wawman denisewawman@gmail.com
N: Erica McAlister e.mcalister@nhm.ac.uk

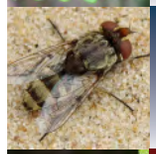
Collating & Managing
Methods available to the schemes are limited, for example there are presently no suitable image management tools. Current tools are: Recorder 6, MapMate, Excel & Access. Both BRC and Dipterists Forum may help Schemes with this task.



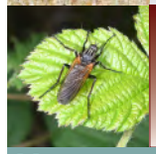
Chloropidae
Chloropidae Study Group
John & Barbara Ismay
schultmay@insectsrus.com



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



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



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

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

Collecting
iRecord
Spreadsheet
iNaturalist
Social media

Disseminating
Own website
iNaturalist project
Scratchpad
Overseas interest
Look for Newsletters on these sites and in the Dipterists Forum Bulletin (https://tinyurl.com/y3pqcajh)

Dipterists Forum www.dipterists.org.uk

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

Design
D. Sumner (ADS)

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