Newsletter No. 29
Autumn 2024

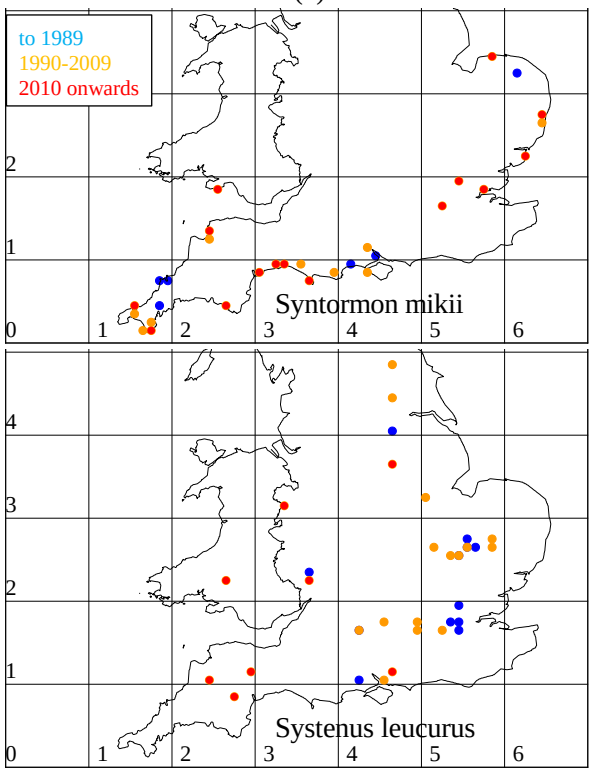
Dolichopodids recorded at the Dipterists Forum summer field meeting in South Wales, 2023

Martin Drake

This meeting must rate as one of the most disappointing of recent years. A mix of poor weather during the week following one of the driest early summers for many years made a bad combination for finding flies. Our base during 8-15 July at Swansea University was well placed for some beautiful sites from the coast to the hills. From over 40 sites we found 106 species, which is at the lower end of what we normally manage during these meetings, but reasonable given the weather.

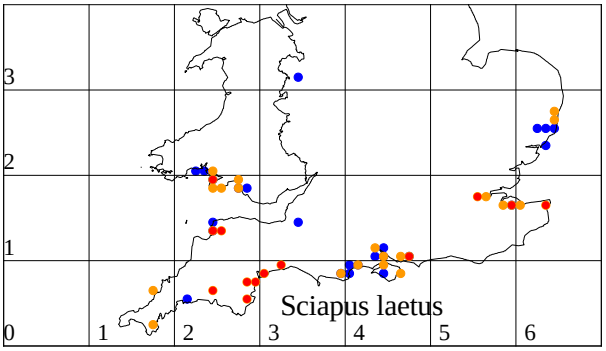
The only Nationally Rare species was *Syntormon mikii* from Oxwich NNR found among reed and *Iris* in wet woodland on the edge of the dunes. I believe this is the first record for Wales for this predominantly coastal species (map). We had six Nationally Scarce species. Close to Oxwich is Mill Wood where *Syntormon fuscipes* was found. It is probably frequent in southern Wales but likely to be overlooked as yet another tiddler, and hardly deserves its conservation status. *Systenus leucurus* from Dinefwr Deer Park was another first for Wales (map). It is infrequently recorded in England but overlooked because the adults are loath to fly from the rot-holes in which their larvae develop. The single female was caught by sweeping up and down the trunks of big trees in this old parkland while looking for *Medetera*. I did find *M. unisetosa* here which is probably fairly frequent in the southwest although nearly all the records are mine so there is likely to be considerable bias as I live in Devon. Two other *Medetera* of interest were *belgica* and *peloria*, both previously confused under *muralis*, so it was ironic to get both the new look-alikes here but no *muralis* which turns out to be the least common of the three (Drake 2024, *Dipterists Digest* **31**, 74-79). Also at Dinefwr was *Sympycnus spiculatus* whose distribution is scattered over Wales and England with a greater frequency in the north and Scotland. Two more coastal species were *Dolichopus notatus* and *Sciapus laetus* at Cwm Ivy, the former in scrubby dunes with short turf, and *D. signifer* at the dunes of Crymlyn Burrows. The two *Dolichopus* species are frequent around the Welsh coast but *S. laetus* has a curiously dense but restricted distribution on the southern coast (map). Two not especially uncommon species are worth mentioning in a Welsh context. *Sciapus wiedemanni* was found in pine and oak woodland on dunes at Pembury Forest. It is quite frequent in dry grasslands throughout Britain but in Wales is confined to the coast, perhaps reflecting the lack of suitable dry habitat in rainy Wales. At the other extreme, *Lamprochromus bifasciatus* was found in wet woodland at Dinefwr, but this wetland species is unaccountably scarce in Wales (map).

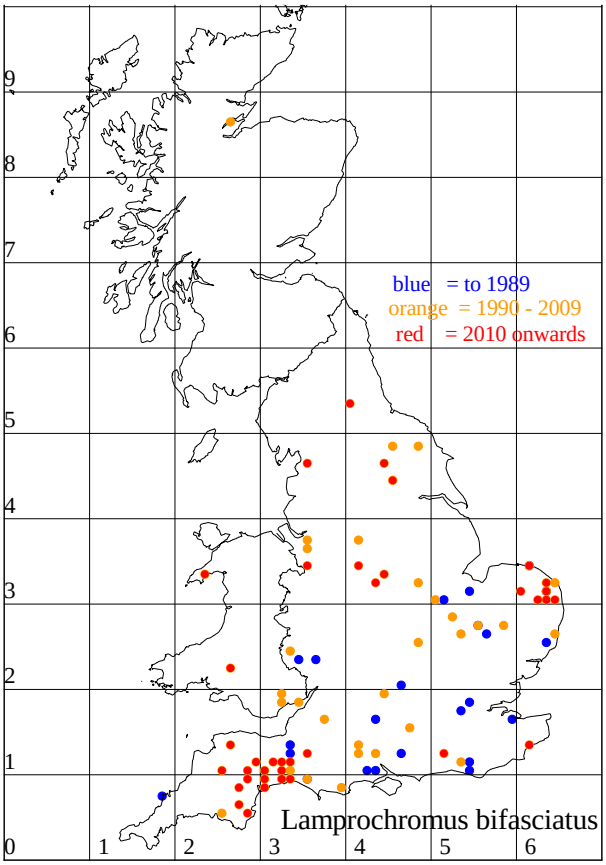
Among the most widespread in terms of number of sites where they were found, the usual suspects were abundant, e.g. *Chrysotus gramineus* (at 33 sites), *Gymnopternus aerosus* (25), *Poecilobothrus nobilitatus* (20) and *Dolichopus plumipes* (19). Among less common ('local') species of slightly more interest were *Chrysotimus molliculus* (8), *Hercostomus nigriplantis* and *Syntormon denticulatus* (7), *D. wahlbergi* and *Argyra vestita* (6), *D. diadema* and *D. sabinus* (5).



As in recent meetings, a large number of specimens were passed to me for identification during the evening at our lab, and I must thank the many collectors for this contribution. Of the total 106 species, 13 were found by others and not by me. It may not sound a big addition but it's definitely worth the effort of passing me specimens. Among those that I did not find was the single individual of the scarce species *Dolichopus signifer*, while several others were not just run-of-the-mill species, like *Ethiromyia chalybea*, *Poecilobothrus principalis*, *Rhaphium longicorne* and *Tachytrechus insignis*.

All the records are available on iRecord thanks to Jane Hewitt.

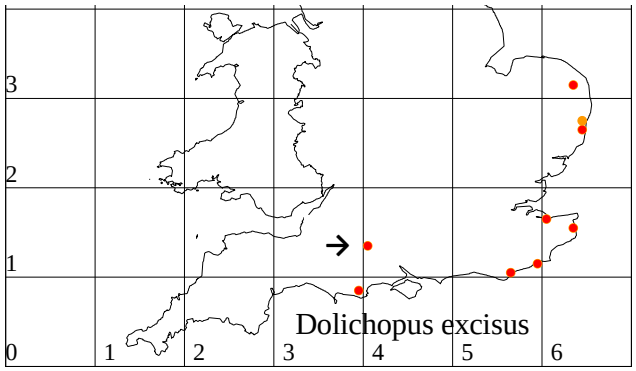


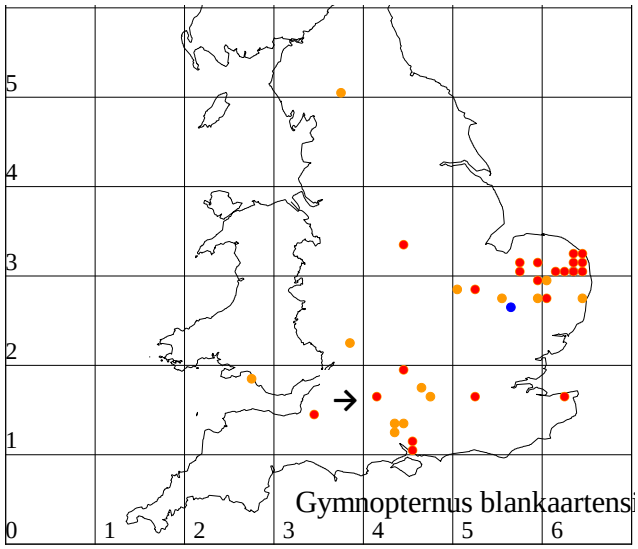


Dolichopodids recorded at the Dipterists Forum spring field meeting in Wiltshire, 2023

Martin Drake

In the expectation that May in recent years is more like June of a couple of decades ago, I joined the Dipterists Forum's brief spring field meeting in Wiltshire, 19-21 May, based on the edge of Salisbury Plain. Together with records from a few others, we found 25 species from a variety of sites ranging from chalk grassland and scrub to fens. The most interesting was Mike Ashworth's find of *Dolichopus excisus*, of which the few previous records suggested was a 'near coastal' species but now is known well inland from the wet meadow at Langford Lakes (map, arrow). But since the species has been known in Britain for only 20 years since David Gibbs found it, its distribution is probably just poorly understood. *Neurigona suturalis* was frequent in the scrubby areas of Salisbury Plain on the Chalk, reinforcing the established understanding of the preference of this species for dry woodland and scrub, which is not the usual habitat one expects of a dolichopodid. *Syntormon macula* turned up a couple of times, females at this time of year; it is quickly becoming clear that this is not the rarity once thought. The same comment applies to the over-rated status of small *Rhaphium fasciatum* which is probably just overlooked (Smallbrook, woodland). Although not given a rarity status, *Gymnopternus blankaartensis* is probably rather scarcer than these previously mentioned species, turning up in seepages under the trees along the valley floor of Jones's Mill nature reserve (map, arrow).





Possible female of *Chrysotus collini*

Martin Drake

Chrysotus collini is rarely recorded. I found a large population on Steart marshes, Somerset (ST2543, 17 vi 2023), the new Wildfowl & Wetland Trust reserve. Finding lots of males is unusual in itself but they were accompanied by many females that I assume belonged to this species. They have yellow front and mid tibiae and dark hind tibiae, which narrows the candidates to three known species: *blepharosceles*, *cupreus* and *monochaetus*, ignoring *melampodius* whose female is unknown and which may well not be British (I cannot find a convincing male specimen in museums). If I am right, then these females are indistinguishable from the common *blepharosceles* of which only a few males were found in the same samples. Of course, I may be wrong as one would expect all the tibiae to be yellow, matching those of females whose males have the same colour pattern as *collini*, like the ubiquitous *gramineus*. Another reason for being mistaken is that *Chrysotus* have pronounced protandry (males predominate at first, then females later) so I may have sampled when male *blepharosceles* are declining and their females just appearing, but this seems very unlikely in mid June. A job for DNA analysis to solve, perhaps.

Syntormon in cold months

Martin Drake

Syntormon metathesis was added to the British list only recently (Drake 2023, *Dipterists Digest* **30**, 55-59) but already Martin Greenland has added a record from the southern part of the Norfolk fens (Burgh Common TG441127), and of particular interest is the date – 21 March 2023. A few other species of *Syntormon* have been collected early or late in the year, suggesting that they may overwinter as adults. In particular, *S. denticulatus* has been found in nearly every month (not December), followed by *S. pallipes* (not January or December). Given how few records exist for *S. metathesis*, the early date suggests another species with a long winter flight period.

Size distributions in dolichopodids

Martin Drake

Stuart Reynolds writes an excellent series of articles in *Antenna*, the bulletin of the Royal Entomological Society, on a wide range of issues. His latest (although his name as author has been omitted by mistake) concerns the well known but less easily explained size distribution in arthropods (Reynolds 2024. Insects great and small: on the significance of size. *Antenna* **48(2)**, 61-69). A typical size-distribution histogram for beetles shows a preponderance of small species, and when replotted with lengths converted to their log values shows that this distribution is log-normal. I tried this for dolichopodids, using the mean values for each species, which I have measured for ten individuals of each sex for each species where available (Figs. 1, 2). I combined males and females as there is little difference in the histograms when each sex is plotted separately. While wing length is more reliable than body length as a measure, since bodies shrink in dry specimens but wings don't, I illustrate both measurements here since my supposedly better measure does not show quite such a clear log-normal distribution as the body length. I don't know why.

As Reynolds and others point out, there is an odd shortage of very small species – the curve drops off sharply at the left-hand side. In this respect, dolichopodids are no different from other insects.

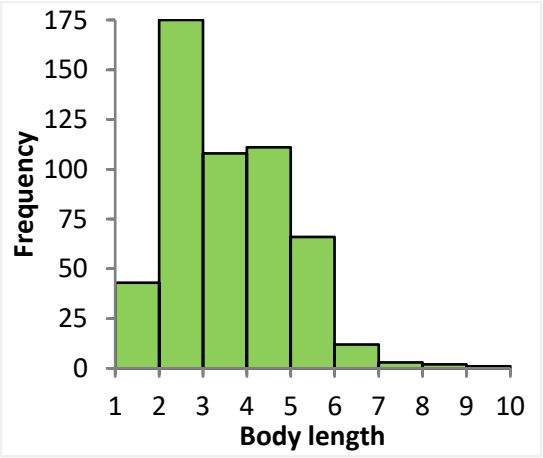


Fig. 1. Size frequency of dolichopodids using body length.

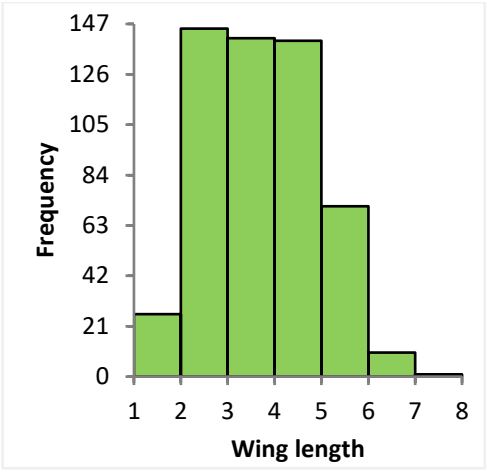


Fig. 2. Size frequency of dolichopodids using wing length.

Another thread that Reynolds discusses is the difference in size between insect orders. A graph he presents shows that mean size and its variance are fairly discrete for each order, taken from the tiniest to the largest of 35 orders. At the smaller scale of suborders of dolichopodids, this holds approximately true, although I have used minimum and maximum size since the sample of each subfamily is necessarily rather small and not amenable to estimating standard deviations (Fig. 3). Excuse my primitive histogram which gives the mean value in the middle with min and max as boxes rather than as a single line. What I find interesting is that two subfamilies that appear to include a mishmash of clades, based on morphology, have the widest range of size – so Diaphorinae includes large *Argyra* and tiny *Chrysotus* (among others), and Hydroporinae has our giants like *Liancalus* and *Scellus*, as well as tiny *Aphrosylus*. This is a gross simplification, but maybe size is a 'character' that should be included in phylogenies.

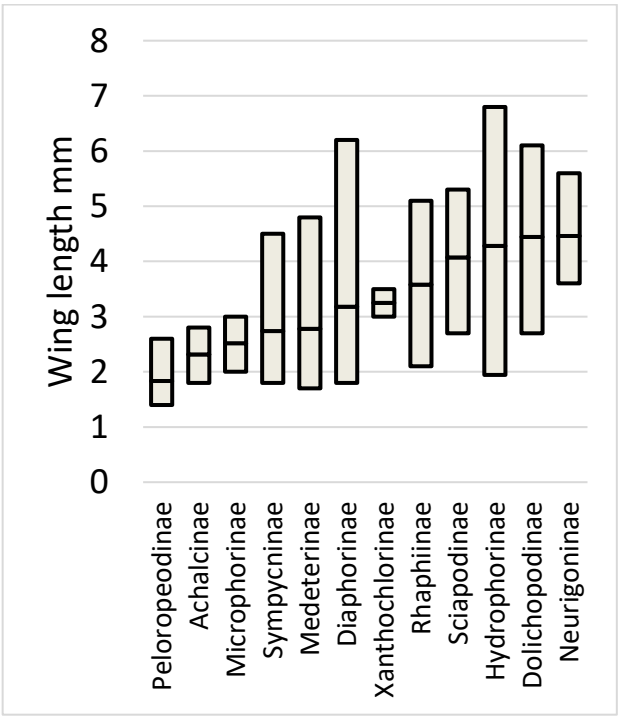
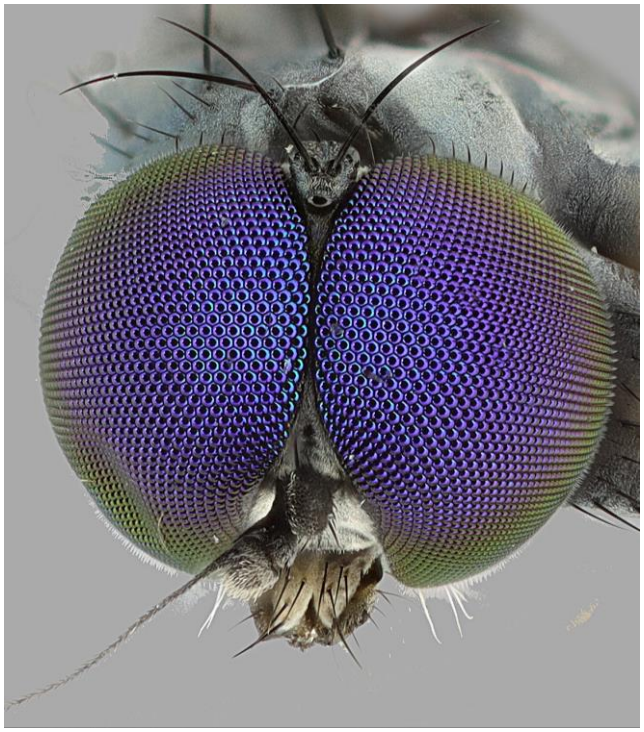


Fig. 3. Wing length within each subfamily of dolichopodids, ordered by the mean value (with minimum and maximum).

Eye colour in dolichopodids

Martin Drake

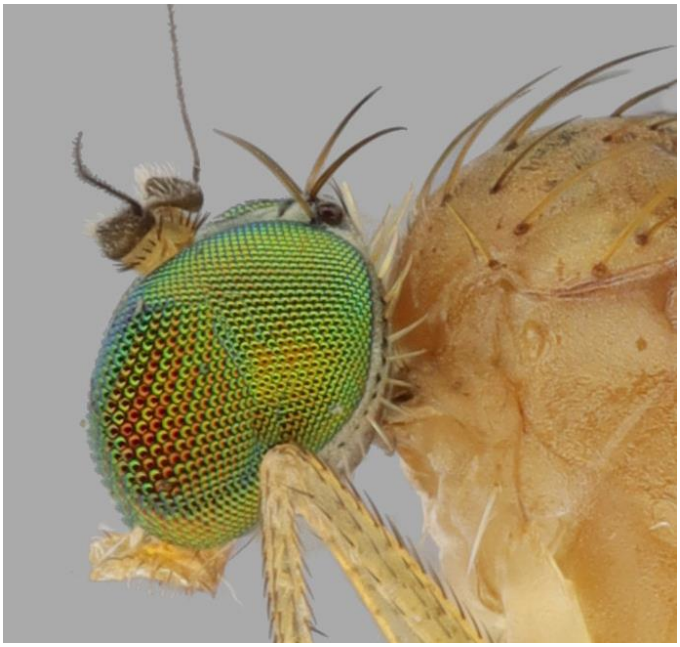
Colourful eyes are one of the attractive features of dolichopodids. They not like this for out delectation but do add to the fascination. It is a shame that the colours fade when they dry out, and the eyes often collapse if ethyl acetate is used as a killing agent (CO_2 or freezing help in this regard). As with other dipterans with coloured eyes, the lens is not completely transparent but reflects a narrow range of wavelengths, which accounts for the colours we see. Colour photoreceptors are found in the larger facets which are consequently the most colourful parts of their eyes. Stuart Ball's photo of *Diaphorus oculatus* shows an eye with the large facets having only one colour, violet in this case, but other species have alternating rows with facets of different colours, including red, orange, yellow and green, which correspond to different internal structures orientated at right-angles, as in Stuart's photo of a *Xanthochlorus*.



In species with colour patterns, the differently coloured facets are sensitive to different wavelengths, providing a spectral filter which enhances colour contrasts. One suggestion for this is to improve colour vision and to overcome glare caused by polarised light from reflective surfaces. In the sunlit leafy places that many dolichopodids live, this should improve their performance as predators of small arthropods. Or the colours are another signalling device, or conversely signalling using legs and wings with white 'flags' shows up better against a coloured background.

An avenue to pursue is the relationship between the type of colouring and the habitat occupied and the type of courtship. Why are the large facets of *D. occulatus* monochrome but those of *Xanthochlorus* bicoloured?

Many thanks to Stuart for permission to use his photographs.



Dutch atlas of dolichopodids

Marc Pollet and Henk Meuffels (2023) have produced a wonderful atlas of the Dutch dolichopodid fauna. The down side is that it is in Dutch, but pasting text into Google Translate overcomes language problems if you need only small bits of information. The upside is that it brings together a lot on ecology and phenology. As you would expect in a country smaller and less diverse climatically and geologically than Britain, the Dutch fauna is smaller than our (264 species compared to about 320) but it does include genera and species we don't have. Some of these may occur in Britain, such as *Campsicnemus lumbatus* and *Dolichopus tanythrix*, so checking the habitat preferences is a way of homing in on these possible additions.

Pollet, M. & Meuffels, H. 2023. *Verspreidingsatlas van Nederlandse slankpootvliegen (Diptera: Dolichopodidae).* – EIS Kenniscentrum Insecten en andere ongewervelden, Leiden.

Aquatic empids book out now

By the time you receive this Bulletin, the book by Rűdiger Wagner, Marija Ivović and Adrian Plant on aquatic empids will be published (Sűßwasserfauna von Mitteleuropa, 21/26 Empididae). Despite the title of the series, this volume includes the British fauna. The book covers identification of males and, where possible, females, larvae and pupae, along with ecology, behaviour, flight period and distribution. Wait for a proper review, but I'm guessing it will be a boon to British empid enthusiasts.

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