# Newsletter No. 21
# Autumn 2016

## Editorial

Here is another dolichopodid-orientated newsletter. If you'd like to read more about empidids then please send us some contributions. I've included maps of several dolichopodids that I discuss to show that we are slowly covering the country, and a map of species-density to help target the obvious holes in the maps. Even the latest hoverfly atlas has gaps so we are unlikely to achieve anything like full coverage, but I'm hoping the map may prompt some effort. I've been writing and illustrating new keys to replace Fonseca, but it's slow work so don't expect drafts to test for a while. The Royal Entomological Society have shown interest in publishing it, as part of their drive to get more Handbooks into print.

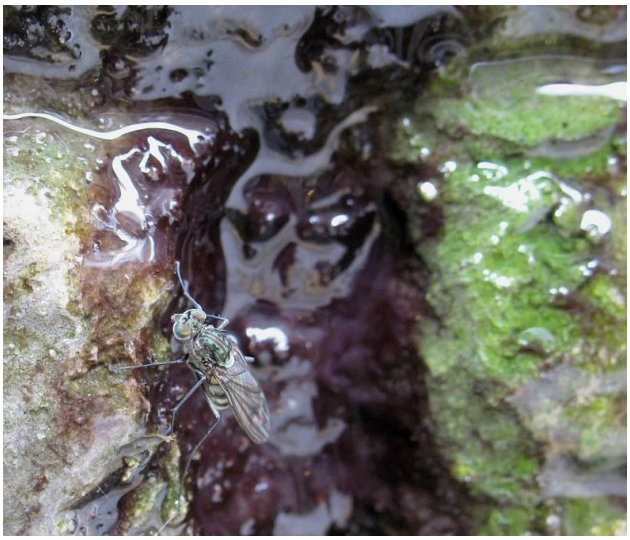
## *Liancalus virens* habitat preferences

**Duncan Sivell**

*Liancalus virens* was one of the first Dolichopodid species I collected, mainly because the individual in question was so obvious, sitting on an evergreen shrub in central Peterborough at an odd time of year; before spring had really sprung. I was lucky to be carrying a small net in my bag at the time. A glance at the NBN showed that most records are coastal or upland, so Peterborough seemed a rather strange location for this fly. However, when I showed the specimen to Alan Stubbs he suggested the cathedral could be the breeding site, as areas where rainwater trickles down the stonework could create the suitable habitat for the larvae.

Once seen *Liancalus virens* is very recognisable, and after my first encounter with this dolly I have found it on coastal cliff seepages, exactly where you would expect to find it. I have also seen *L. virens* in abundance in central Europe; in sandstone crevices which never catch the sunlight where the rock surface is covered in moss and algae. So wet surfaces with a matt of plant growth seem to be the key. More recently I have come across *L. virens* a number of times in London; along Regent's Canal, in South Kensington and at the Natural History Museum itself. This dolly has been recorded in the NHM Wildlife Garden over a number of years. One of the three ponds in the garden has an outflow trickling over large rocks, with associated algal growth, which would appear to create the right breeding site for this fly. The Museum building itself should not be overlooked, however, and the site where I see *L. virens* most frequently is by an outside tap that I typically walk past four or five times a week. This tap seems to have been dripping for several years, encouraging the growth of algae on the wall (see photo).

When I first came across *Liancalus virens* in Peterborough I wondered if the sighting was a little bit odd. Now I consider *L. virens* to be an urban-adapted species and I would half-expect to find this dolly in a built-up city centre. Ultimately Fonseca had it right in his 1978 RES Handbook; *Liancalus virens* can be found "wherever fresh water is trickling down a vertical rock-face", but we can add brick and concrete to the list of substrates.



*Liancalus virens* resting on the wet brickwork.

Going up in the world? *Liancalus virens* can be found along streets like these in South Kensington.

A dripping tap outside the NHM where *Liancalus virens* adults are frequently seen.

## *Dolichopus cilifemoratus* in Northamptonshire VC32

**John Showers[1], Brian Harding[2]** and **Graham Warnes[3]**

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On 5th July 2015 three members of the Northamptonshire and Peterborough Diptera Group visited Irthlingborough Lakes and Meadows, a relatively newly acquired nature reserve of the Wildlife Trust for Beds, Cambs and Northants. The reserve consists of a series of flooded gravel pits with a number of meadows, which are flooded most years. Over the past two winters these meadows have had a large amount of scrub removed and have been grazed with cattle. We spent about three hours searching and sweeping and took voucher specimens away for identification.

A couple of days later, Brian Harding e-mailed me to say that he had found a scarce dolichopodid but declined to tell me which until I had had a chance to examine my catch. Amongst my specimens were four male and one female *Dolichopus cilifemoratus.* I replied to Brian that I had taken this species and he confirmed that it was the same as the one he was referring to. I contacted Graham Warnes to ask him to check his dolichopodids and he confirmed that he had taken it too.

This is only the second record for Northamptonshire. In total 7 males and 1 female were recorded, although some female dolichopodids were discarded, so this figure may be an underestimate.

The meadows where they were taken consist of rough, damp grassland with some ditches and pools at SP949701 and SP951703. They are subject to flooding in some winters and are managed as grassland to attract waders and wintering wigeon *Anas penelope.*

**Acknowledgements**

Our thanks go to the Wildlife Trust for permission to collect in this area, which is not open to the general public.

## Interesting dolichopodid records from the Nottingham field meeting, 11-17 July 2015

**Martin Drake**

There was a collective groan when we learned that the summer meeting was to be held at Nottingham, an area previously avoided by dipterists because it was "known" to be dull. How pleasing to be shown wrong! Here is my analysis of just the dolichopodids; no doubt other families will follow suit. I use records on the E&D MapMate database, and clearly I have not captured many previous records so the conclusions may have to be toned down somewhat.

With the help of ten other members of the group who handed me specimens during the week, we collected dolichopodid records of 96 species from 54 sites in 24 hectads. To put that into the context of the 100km square SK, there were exactly 96 species from earlier records in the database from rather more hectads (41), but whereas these earlier records included only three species recorded at a reasonable number of places (10-20 sites), during the Nottingham meeting we found 11 species at 10-20 sites and another 8 species from 20-43 sites. We now know of 127 species in square SK. As a consequence of the greater density of records, square SK no longer stands out as a pale blob on map of the commoner species. This seems ample justification for these DF meetings.

The Nottingham meeting's total included four nationally scarce species, compared to nine in earlier records, although some of these date from the early part of the 20th century so may be incorrect. The four species were:

*Argyra atriceps*, frequent at Meden Trail, Pleasley (VC56, SK511648) in both dry woodland on the river gorge sides and among tall herbaceous vegetation by the River Meden.

*Rhaphium micans*, a single female at Attenborough Reserve (VC56, SK523344) at the margins of this large flooded gravel pit.

*Sciapus zonatulus*, a single female that is almost certainly this species from Spalford Warren, (VC56, SK8267), a sand-blown heathland.

*Systenus leucurus*, a male from Sherwood Forest (VC56, SK622678) in dry oak woodland. Adults are reputedly rarely swept but more often reared from rot-hole debris.

Local but quite uncommon species included:

*Chrysotus cupreus*, Ploughman Wood (VC56, SK641466), deciduous woodland with one *Typha*-dominated pond on sand in a grassy area This species is far less frequently recorded than before 1990.

*Gymnopternus assimilis*, Forbes Hole LNR (VC56, SK496323), in a flowery meadow. This is a fen species, but see the next species .....

*Gymnopternus blankaartensis*, Forbes Hole LNR again, at emergent vegetation by woodland pond. This species is normally found only in high quality fens, so what it was doing in this post-industrial shaded pond-scape is quite beyond explanation.

*Hercostomus plagiatus*, Annesley Woodhouse Quarry (VC56, SK486534) at a lake shore with a tiny inflow stream and weak seepages in a disused limestone quarry, and at

Wilford Claypit (VC56, SK571355) at seepages in a disused claypit. The species is on the north-west edge of its lowlands range here.

*Neurigona suturalis*, Meden Trail, Pleasley (VC56, SK507648) at the river margin.

*Medetera diadema*, Erewash Meadows (VC56, SK439493) on an isolated hawthorn trunk in cattle pasture.

*Poecilobothrus chrysozygos*, Carvers Rocks (VC57, SK331226) at a drying reservoir shore with a tiny patch of acid mire. The record is on the north-west edge of its range in the English lowlands.

*Rhaphium antennatum*, Attenborough Reserve (VC56, SK518337) at the water margins of a marsh. The species appears to be less frequently recorded now than before 1990.

## Name changes

**Martin Drake**

I was looking at the updated check list in the Dipterists Forum website when I noticed that the spelling of some *Syntormon* has reverted from neuter in Chandler's 1998 check list to masculine, as in Fonseca's *Handbook*. These names are *Syntormon aulicus*, *monilis*, *pumilus*, *silvianus*, *tarsatus* and *bicolorellus*. *Poecilobothrus chrysozygus* has gone back to *chrysozygos*. *Ethiromyia chalybea* is feminine, as stated by Brooks (2005) who erected the genus, so not *chalybeus* as in the 1998 check list and Fonseca. These changes have reached the downloadable pdf but nowhere else in the DF website.

Users of MapMate and the Natural History Museum's species dictionary will continue to be irritated with the old spelling of *E. chalybea* and, together with *Gymnopternus blankaartensis* that it is still left behind in *Hercostomus* (as in the map legends later in this newsletter). While *Hercostomus* is a rag-bag genus, *Ethiromyia* and *Gymnopternus* are clearly monophyletic, and their removal from the *Hercostomus* starts the long-overdue process of emptying this dustbin of the more obviously distinct genera. Brooks (2005) grouped *H. chetifer* and *fulvicaudis* (and by implication the very similar *rothi*) with the non-British type species of *Hercostomus*, leaving many others in another phylogenetically distinct group, but suggested that *nanus* and *parvilamellatus* were more similar to *Sybistroma*. One day, perhaps, there may well be at least two more genera to consider.

**Reference**

Brooks, S.E. 2005. Systematics and phylogeny of Dolichopodinae (Diptera: Dolichopodidae). *Zootaxa* **857**, 1-158.

## Fenland dolichopodids

**Martin Drake**

Continuing the series on habitat specialists, I now turn to those of base-rich wetlands. As with all generalisations about habitat needs, some of my allocations may be suspect or too rigid. Clearly, since dolichopodids include predominantly wetland species, and neutral to base-rich wetlands includes a large range of habitat types, I have to draw a line between the clear specialists and those that will be common but not restricted to fenlands. Nor does it help that plant ecologists have understandable trouble defining their communities, as the introductory overviews of the National Vegetation Classification make obvious (Rodwell 1991, 1995). So I am taking a very primitive 19th century definition of fen, being short to tall vegetation on saturated peat with base-rich influence, producing a species-rich plant community sometimes with much reed or sedge. Apologies to parts of northern Britain for being chopped off the maps. Date division on maps is 1990.

*Achalcus britannicus*. This tiny species was described new to science from Marazion Marsh, the largest reedbed in Cornwall. It is found in reedbeds, valley fen, wet grassland and washlands with ditches, occasionally in carr woodland and some more swamp-like sites. Clearly it is not restricted to reedbed or rich fen, nor does it characterise some of Britain's best fens, for instance, it is rather uncommon in Broadland fens.

*Achalcus nigropunctatus*. With only records from six Broadland fens (Norfolk), the information is limited, but while some were collected from open short fen vegetation, more were from tall fen vegetation, including reeds, and from sallow and alder car with large tussocky *Carex*. There seems to be a requirement for rather dense, even tangled vegetation, partly confirmed by all the records having been made by suction sampling.

*Achalcus thalhammeri*. An association with tall reed or tall mixed fen vegetation at water margins - ditches and ponds - seems to be constant. This precise requirement is far clearer than for other *Achalcus* species. Some sites are on clay so there is no restriction to peat soils, and therefore it is not confined to conventionally recognised fen.

*Achalcus vaillanti*. At first this may seem a good fen species as it is widespread in Norfolk's Broadland fens, but the association is more with swamp-like conditions or low to tall sedges, reeds and *Glyceria maxima* by often at water margins but not necessarily so in the wettest sites. So it only just qualifies as a 'fen' species, and perhaps should be thought of as a swamp species.

*Argyra elongata*. Most records from the southern half of England are from fens, in the broad sense, with reeds, sedges and sometimes carr, although some sites are ditches in wet grasslands or swamp at pond and lake margins, often with large *Carex*. Most sites are almost certainly on peat but they cannot all be neutral or base-rich, particularly those in northern England and Scotland.

*Dolichopus laticola*. This is a fenland species par excellance. It is almost confined to England's best eastern fenland where it is widespread in freshwater (not mildly brackish) vegetation. It is not been possible to be more precise about the microhabitat it occupies although it is infrequent in fen carr.

*Dolichopus longitarsis*. In southern England, at least, this species appears to be strongly associated with fens, often close to water margins within them. In northern England and Scotland it also occurs on more acid, often peaty sites, although some of these may be poor-fen with reed and sedges. Pollet (2001) suggests that it requires tree canopy but this does not fit many sites where it occurs in Britain.

*Dolichopus nigripes*. This species is also almost confined to Broadland fens but must be more fussy than *laticola* since is avoids the very best fens here. It appears to prefer more

open vegetation, and avoids dense reed and saw-sedge (*Cladium*), and may perhaps be more associated with fen-meadow than true fen.

*Ethiromyia chalybea*. This species is perhaps one of the most characteristic species of true fens on peat where is can be common but it also occurs in small patches of swamp or water-margin emergents on mineral soils. It is also found in fen carr but whether as strays or residents is not clear.

*Gymnopternus assimilis*. This is another species with a reputation for being a fen specialist but, while it is undoubtedly abundant in true fens and reedbeds, it also occurs in peat or mineral swamps by water margins, the latter making up many of the dots on the distribution map.

*Gymnopternus blankaartensis*. As well as being almost confined to fens, there seems to be a preference for some shade, either as scrub, carr or tall reed or tall herb-fen vegetation. Even where abundant in Norfolk's Broadland fens, it is not often found in shorter herb-rich fen. Nearly all the sites are on peat, with rare occurrences on mineral soils.

*Teuchophorus spinigerellus*. I suppose fens are the place where this species occurs most abundantly but it turns up in so many unshaded wet places that it only just qualifies as a fen specialist. Like some other species, the association seems to break down in northern England where it is as likely to be found at upper saltmarsh, freshwater seepages and wet grasslands.

*Thrypticus smaragdinus*. Apart from one outlying site in Poole Harbour, Dorset, this species is confined to Norfolk's Broadland where it is widespread in the northern fens. There seems to be no constant feature in the structure of the vegetation where it occurs, but reed is mentioned many times in the site descriptions (more than for some other fen species), and this is consistent with its reed-mining larval habit (Dyte 1993).

A few other species may be common on fens but are also found at other habitats, for example *Argyra vestita* (also saltmarsh) and *Hercostomus plagiatus* (also coastal soft-rock and some inland mineral seepages). *Telmaturgus tumidulus* is probably associated with peat as it is found in bogs in Dorset and Hampshire as well as fens in Norfolk and north Wales. Other species may be abundant in fens but cannot, at least in Britain, be classed as fenland species. For instance, Pollet (1992, 2001) included *Lamprochromus bifasciatus*, *Rhaphium fasciatum*, *Syntormon bicolorellus* and *Micromorphus albipes* (comprising at least three species in Britain) as 'marshland' or 'reed marsh' species (his equivalent of my 'fenland') but all are often found in other wet places such as seepages, river margins, acid wet grasslands and wet woods.

**References**


Dyte, C.E. 1993. The occurrence of *Thrypticus smaragdinus* Gerst. (Diptera: Dolichopodidae) in Britain, with remarks on plant hosts in the genus. *The Entomologist* **112**, 81-84.

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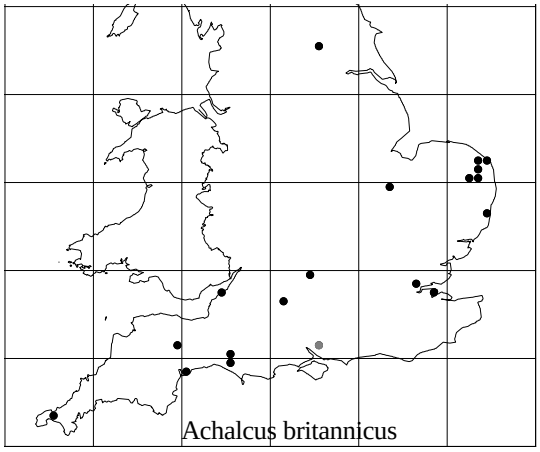
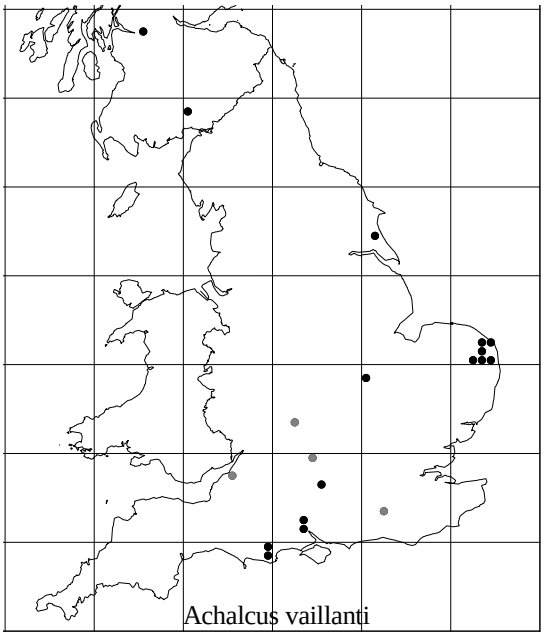
Pollet, M. 2001. Dolichopodid biodiversity and site quality assessment of reed marshes and grasslands in Belgium (Diptera: Dolichopodidae). *Journal of Insect Conservation*. **5,** 99-116.

Rodwell, J.S. (ed.) 1991. *British plant communities. Volume 1. Woodlands and scrub*. Cambridge University Press.

Rodwell, J.S. (ed.) 1995. *British plant communities. Volume 4. Aquatic communities, swamps and tall-herb fens*. Cambridge University Press.



Achalcus britannicus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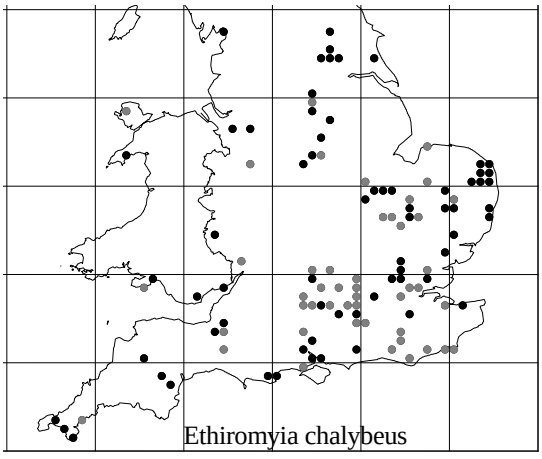
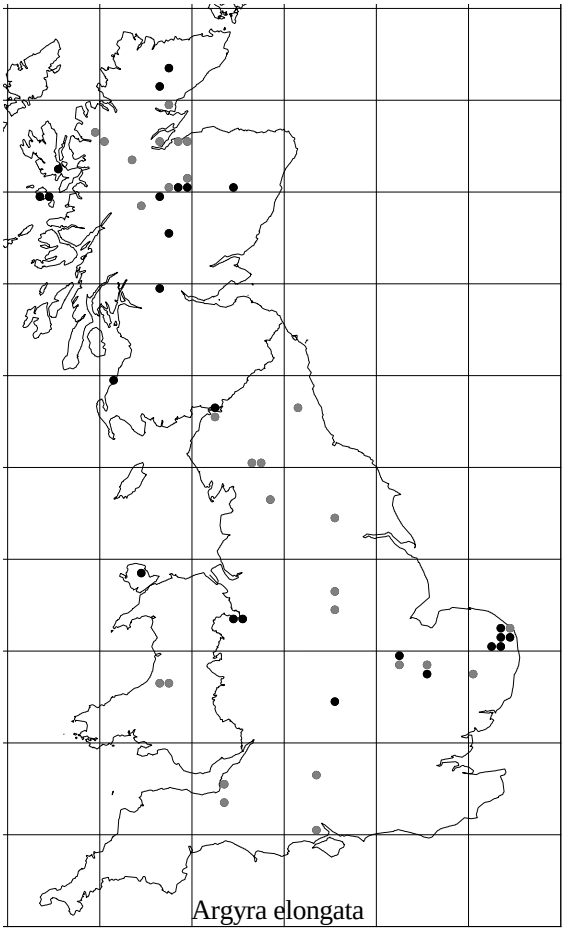
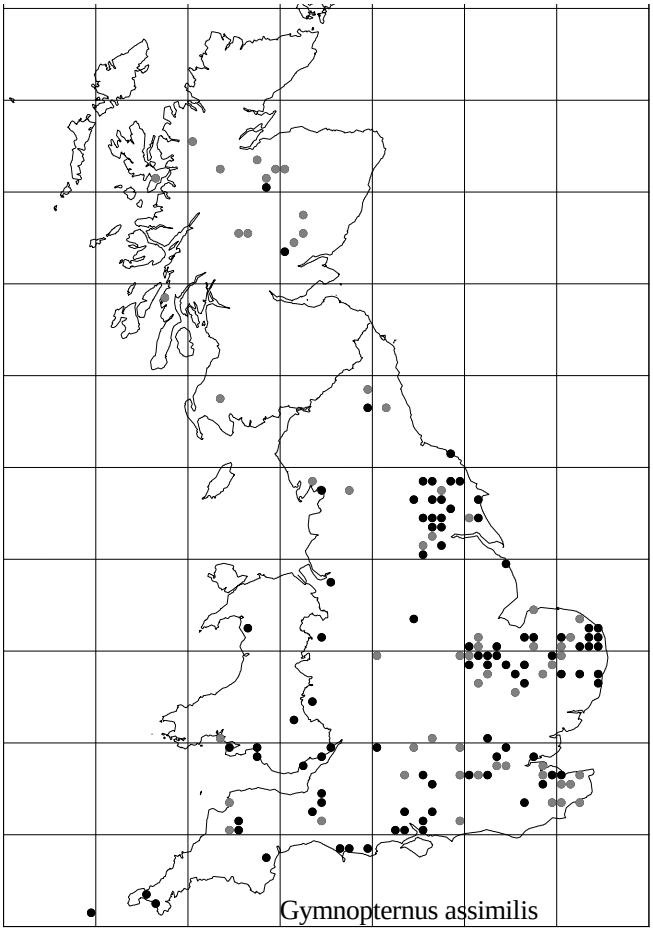
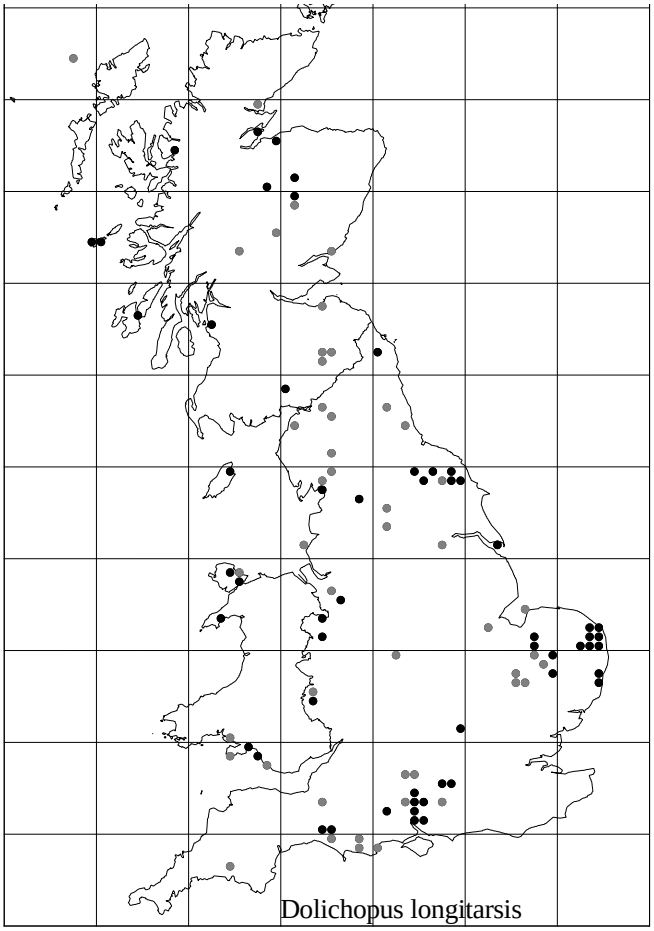

Ethiromyia chalybeus



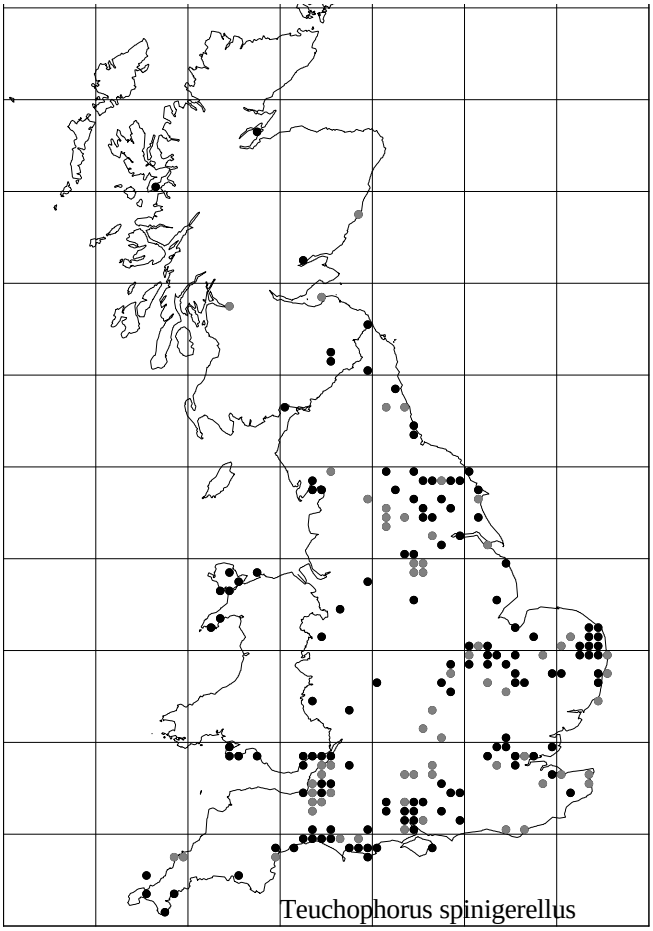
Argyra elongata



Gymnopternus assimilis



Dolichopus longitarsis



Teuchophorus spinigerellus

## Dolichopodid Male Secondary Sexual Characters

**Roy Crossley**

Male Secondary Sexual Characters (MSSC) are a feature of many dolichopodids, and they are particularly obvious in *Dolichopus* species, especially the large and often spectacular lamellae.

Rather less obvious examples of MSSC's are modifications to the tarsal segments of either the 1st (front) or 2nd (middle) legs. These may involve segments that are strikingly enlarged, plumose, compressed, silvered, or a combination of these, and the characters are used in identification keys. *Dolichopus plumipes* is a familiar example.

A possible MSSC is the markedly sinuate margin of the wing between the anal (A1) and postical (Cu) veins. This occurs in a number of species, and again a common example is provided by *D. plumipes*. Occasionally the shape of the margin can become distorted, probably during the drying process after pinning, and in order to see the character clearly it may be necessary to manipulate the specimen and examine it from various angles.

Some time ago it occurred to me that species with modified tarsi also often possess sinuate wing-margins, and in recent years I have examined males of all 54 British *Dolichopus* species with the exception of *D. plumitarsis*, (but there is a full description of this in Duzee *et al*.,(p.172) on which I have relied). I have 45 species in my collection and I examined the remainder in the collections of the Natural History Museum, London, in March 2010.

The following species have clearly sinuate margins:

*argyrotarsis*
*lineatocornis*
*nigripes*
*pennatus*
*plumipes*
*popularis*
*subpennatus*
*urbanus*
*wahlbergi*

All except *lineatocornis* also possess some form of modification to the tarsal segment(s). Except for *nigripes* in which it is on the front leg, the remainder have it on the 2nd leg. Only two British species have tarsal modifications and lack sinuate margins. These are *D. signatus* which has tarsal segments 4 and 5 of the middle leg silvered on the anterior face, and *D. planitarsis* which has an enlarged and dorsally flattened 5th tarsal segment of the middle leg. *D. signatus* has a smoothly rounded wing-margin and *D. planitarsis* has a straight margin.

Thus the majority of British *Dolichopus* with some form of modification to the tarsal segment(s) of the middle leg also have a sinuate rear wing-margin. Put another way, the majority of species with a sinuate margin also have tarsal modification(s) to the middle leg.

The situation is quite different in species which have some form of modification to the tarsal segment(s) of the front leg. All have rounded or straight margins, with the exception of *D. nigripes* as noted above. These are:

*brevipennis*
*claviger*
*discifer*
*plumitarsis*
*migrans*
*nigripes*

*D. longitarsis* is omitted because the enlargement of the last segment of the front leg is not pronounced; it has a smoothly rounded margin.

The results of this study are summarised in the following table:-

| Species | Modification to tarsi | | Wing-margin | |
|---|---|---|---|---|
| | 1st leg | 2nd leg | straight/rounded | sinuate |
| *argyrotarsis* | | X | | X |
| *pennatus* | | X | | X |
| *plumipes* | | X | | X |
| *popularis* | | X | | X |
| *subpennatus* | | X | | X |
| *urbanus* | | X | | X |
| *wahlbergi* | | X | | X |
| *brevipennis* | X | | X | |
| *claviger* | X | | X | |
| *discifer* | X | | X | |
| *plumitarsis* | X | | X | |
| *migrans* | X | | X | |
| *nigripes* | X | | | X |
| *signatus* | | X | X | |
| *planitarsis* | | X | X | |
| *lineatocornis* | -- | -- | -- | X |

It is usually assumed that flies use modified legs in some form of display or in securing prey in the case of predatory species. Whether wing-margin sinuation noted here has any connection with leg-waving display or is some kind of aerodynamic adaptation can only be speculated on at this time. It might all be coincidence! However I draw attention to it as a possible subject for investigation by others more able than I.

**Reference**

Duzee, M.C. Van, Cole, F.R., Aldrich, J.M. 1921. The Dipterous Genus *Dolichopus* Latrielle in North America. *United States National Museum Bulletin* **116**.

**Acknowledgements**

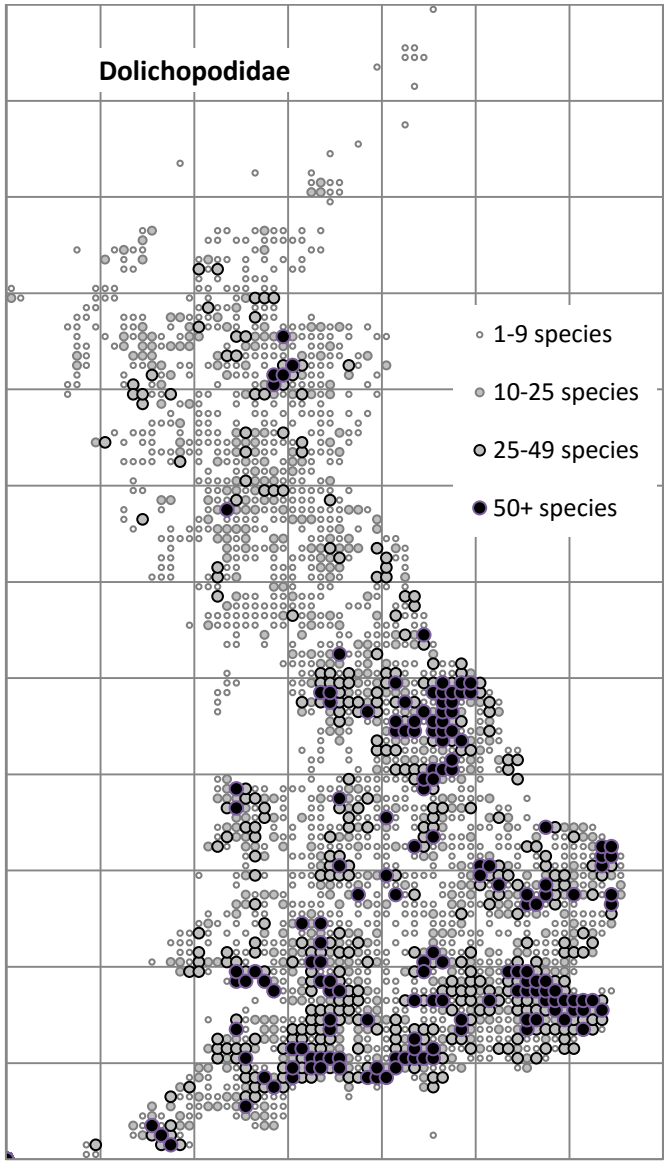
I am obliged to Martin Drake, the late Peter Dyte, Marc Pollet and Duncan Sivell for helpful correspondence, and to Duncan for kindly re-checking specimens of *D.nigripes* in the collection of the NHM. Also to Erica McAlister and other staff members at the NHM for help during my visit in 2010.

## Species density of dolichopodids in Britain

**Martin Drake**

I've plotted the number of species of dolichopodids with records in the E&D MapMate database, using four classes of species-richness. As is expected in relatively early days of a recording scheme, the richness reflects locally enthusiastic recording rather than real underlying regional differences. For example, Yorkshire is black due mainly to Roy Crossley, Kent to Laurence Clemons and East Devon to me, but the New Forest - Dorset heaths, Norfolk Broadland and Spey Valley will probably always be near the top. There are some unreal 'holes' in the map which are just due to the low numbers of records submitted. Top of the poll are seven

hectads with >100 species and they in six different 100km squares.

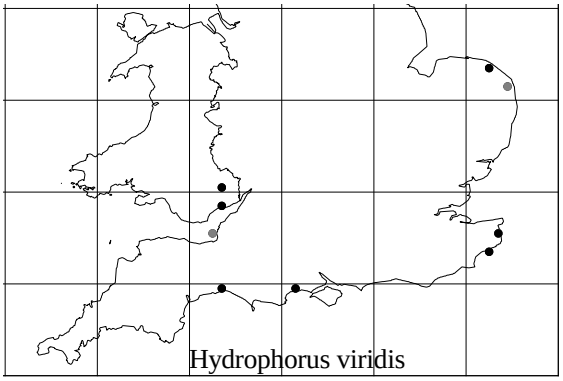


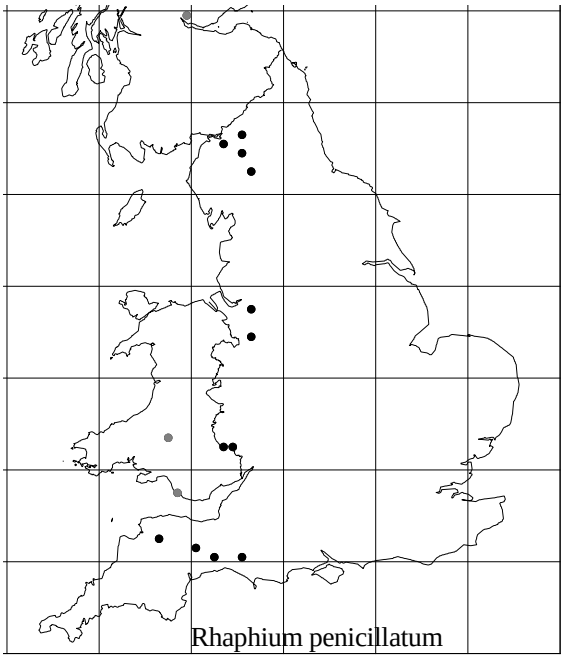

## Interesting records submitted for 2015

Only four rare species were found in 2015, apart from Rob Wolton's 'extinct' *Rhaphium* (Wolton, R. & Drake, C.M. 2015. *Rhaphium pectinatum* (Loew) (Diptera, Dolichopodidae) re-found in Britain. *Dipterists Digest (Second Series)* **22**, 127-130). Two of these, *Syndyas nigripes* (Hybotidae) and *Syntormon macula* (Dolichopodidae) were near sites with existing records so are not mentioned here.

*Hydrophorus viridis*, 1 female, Llanwern TATA Steel plant, ST3685, VC35, 11 August 2015, David Gibbs. With the exception of one correctly identified record from inland Gwent, this species is restricted to the coast.

*Rhaphium penicillatum* Hunkin Wood (Woodland Turst), Uffculme by River Culm, ST083135 and nearby at ST077134, VC3, 7 males altogether, 27 May 2015, Martin Drake. Nearly all records are from stony or sandy rivers, with a decidedly western distribution. The eastern-most Dorset record may be wrong.


Hydrophorus viridis


Rhaphium penicillatum

## Recuration of the Dolichopodidae collection at the Natural History Museum

**Duncan Sivell**

The British and Irish Dolichopodidae collection has recently been recurated; transferring specimens from the old cork slats into cardboard unit trays with plastazoate bases. This modular tray system makes it much easier to move material around when studying the collection and gives individual specimens added protection.

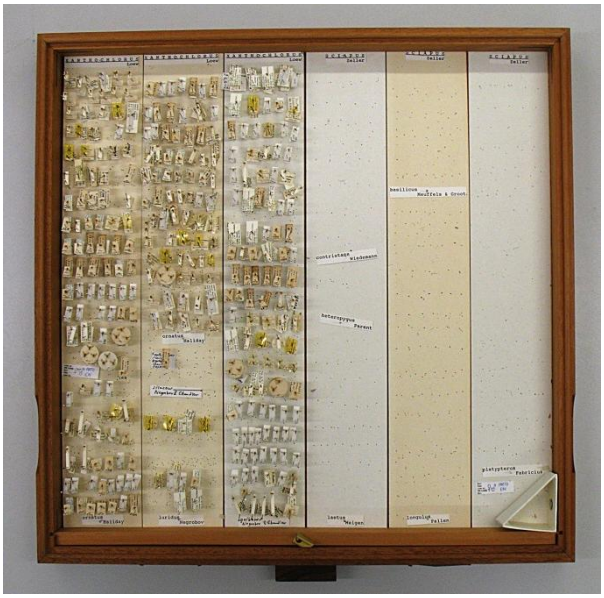
As part of the recuration the family has been reorganised to comply with Peter Chandler's checklist. One exception to this is we have recognised the subfamily Peloropeodinae to keep the British and Irish collection consistent with the NHM's World collection. The Peloropeodinae includes the genera *Acropsilus*, *Anepsiomyia*, *Chrysotimus* and *Micromorphus* and is physically located between the Neurigoninae and Rhaphiinae. In the British and Irish fauna the Peloropeodinae only contains five species, so adopting this subfamily does not create a great departure from the formal checklist, but it is something that visitors to the collection should be aware of.

We also used the recuration process to build expansion space into the collection. This is important as the next major task for the Dolichopodidae will be incorporating recently accessioned material, particularly specimens from Peter Dyte's collection. The existing British and Irish collection

holds nearly 24 000 Dolichopodidae, and the Dyte collection contains another 6000 specimens. Not all of Peter Dyte's material will be kept at the NHM, some will be going to the BEHNS collection at Dinton Pastures, but it will still give a significant boost to the holdings in London and hopefully include some of the British species we are still missing.

Special thanks go to Howard Bentley who has already put names to a large number of Peter Dyte's unidentified specimens, and to Rob Wolton for his recent donation of *Rhaphium pectinatum*, the only specimen we have at the NHM!

Anyone wishing to view the NHM collection is very welcome to do so, and should contact Duncan Sivell to make an appointment (d.sivell@nhm.ac.uk).



*Xanthochlorus* specimens, before and after the recuration.

## More on *Campsicnemus magius*

**Martin Drake & Dawn Painter**

In E&D Newletter 20 (2015), I summarised what is known about the ecology of *C. magius*. During the Dipterists Forum summer meeting at Kent this summer, some of us found this species. Although you will know it from the front cover of *A Dipterists Handbook*, here are some images taken by Dawn at the NHM of one of this year's catch (Rushenden Marshes, Rob Wolton) and Fonseca's from Sandwich Bay, as mentioned in his *Handbook*. Quite what use it makes of these ungainly legs is not clear. Someone needs to sit in the muddy patches where it lives and watch it.

## Acknowledgements

Thanks to those who submitted records in 2015 (Andrew & Janet Graham, Andrew Cunningham, David Gibbs, Geoff Foale, Geoff Wilkinson, Howard Bentley, Laurence Clemons, Mike Pugh, Murdo McDonald, Nigel Jones, Phil Brighton, Phil Porter, Richard Dickson, Rob Wolton; Birmingham Museum collection from which records were extracted at 2015 Dipterists Day).

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