

Newsletter No. 25

Autumn 2020

Editorial

Here is another dolichopodid-biased newsletter. The bias reflects my predilection and lack of copy for the “E” part of the scheme, so if you want a broader read, please send us some contributions. For those of you who like a challenge, I’ve included a key to one of the least tractable dolichopodids that most people throw away – female *Teuchophorus*.

Dolichopodids from the Dipterists Forum meeting at Stirling, 22-29 June 2019

Martin Drake

Our records for the Stirling meeting were marginally down on the last few years, but still included a very respectable 97 species among nearly 6500 specimens from nearly 60 sites in 32 hectads. As in previous years, I am most grateful to the piles of flies given to me during the week – these make a big difference to coverage, and this time included several uncommon flies that I would not have found at the sites I visited.

Starting with these very restricted flies, *Dolichopus maculipennis* is a Scottish speciality from calcareous upland flushes. It was found at Ben Lawers, which is a known locality, but Nigel Jones found it at Meikle Kilrannoch, Acharn (NO2278) which represents an apparently new area for it (see map). For technical reasons (mainly that you have to climb above 600m on base-rich geology to find it), this obviously very rare fly is given Data Deficient status. The other upland Scottish species that requires some physical exertion to find is *Hydrophorus rufibarbis*, which is found above 500m on peaty pools and flushes, although is moderately widespread in the northern half of Scotland. We found it at Ben Lawers and Meall Nan Tarmachan (NN5838), which are at the southern edge of its range (bar one record). We found three uncommon species that are more frequent in Scotland than in the rest of Britain. *Rhaphium lanceolatum* is Near Threatened, and moderately widespread in the northern half of Scotland but very rare elsewhere: Blackwater Marshes (NN5406) and nearby Brig O’Turk Mires (NN5306). *Argyra auricollis* is thinly scattered in Britain but with a distinct concentration of records in the central part of Scotland from Stirling to southern fringes of Highland, curiously all falling within square NN, to which the present meeting added four more hectads. *Argyra elongata* is also more common in Scotland than in the rest of Britain (Lurg Loch, NT0996).

The remaining uncommon species are more frequent in England than Scotland so are probably of more interest to Scottish entomologists. The little *Sympycnus spiculatus*, like *D. maculipennis*, is restricted to base-rich sites which are usually seepages and river margins on limestone. It was found at Arrochymore NS4191 (Serpentine) and at Kippenrait Glen NS7999 and nearby Hermitage Wood (NS8197) which are both on basalt that weathers to give rise to base-rich soils. This species is thinly scattered in Scotland compared to a fairly dense distribution on the limestone hills of northern England. At the other pH extreme, on bogs and acid sites, was *Tachytrechus consobrinus* which is very scarce in Scotland and similarly thinly spread in much of Britain except in the southwest; the two Stirling records from Brig O’Turk Mires and Conic Hill (NS4291) make it look a little more widespread in Scotland.

Rhaphium elegantulum has two Scottish clusters, one in Speyside and the other where we were working in the belt across middle of country. It was plentiful at Blackwater Marshes in the extensive sedge swamp fringing the lake, and there was a single record from the lush seepages of Edinample Meadow (NN5922) close to Loch Earn. These large water bodies are in keeping with *elegantulum*’s frequent association with lakes, flooded pits and reservoirs.

I identified what I take to be *Achalcus vaillanti*, also at Blackwater Marshes, but it’s a female and the key by Pollet (1997) was almost certainly based on alcohol-preserved material and sometimes does not work well with pinned flies. But I mention it in case someone cares to search for tiny yellow dolichopodids at this splendid site. If correct, this is only the third Scottish record. The commoner *A. flavicollis* is comparatively widespread, although rarely recorded, in Scotland; we had it at two sites on the Stirling meeting Devilla Forest (NS9687) and Flanders Moss (NS6197).

Medetera ambigua is one of the easier species to identify in this difficult genus as it one of the few with a glossy violet face. It was found on the trees by the lake in the university grounds where we were based. The lake’s lushly vegetated margin was also where Alan Stubbs found *Teuchophorus nigricosta*, only the second Scottish site for it. It is widespread and hardly worthy of note in most of England but peters out near the border.

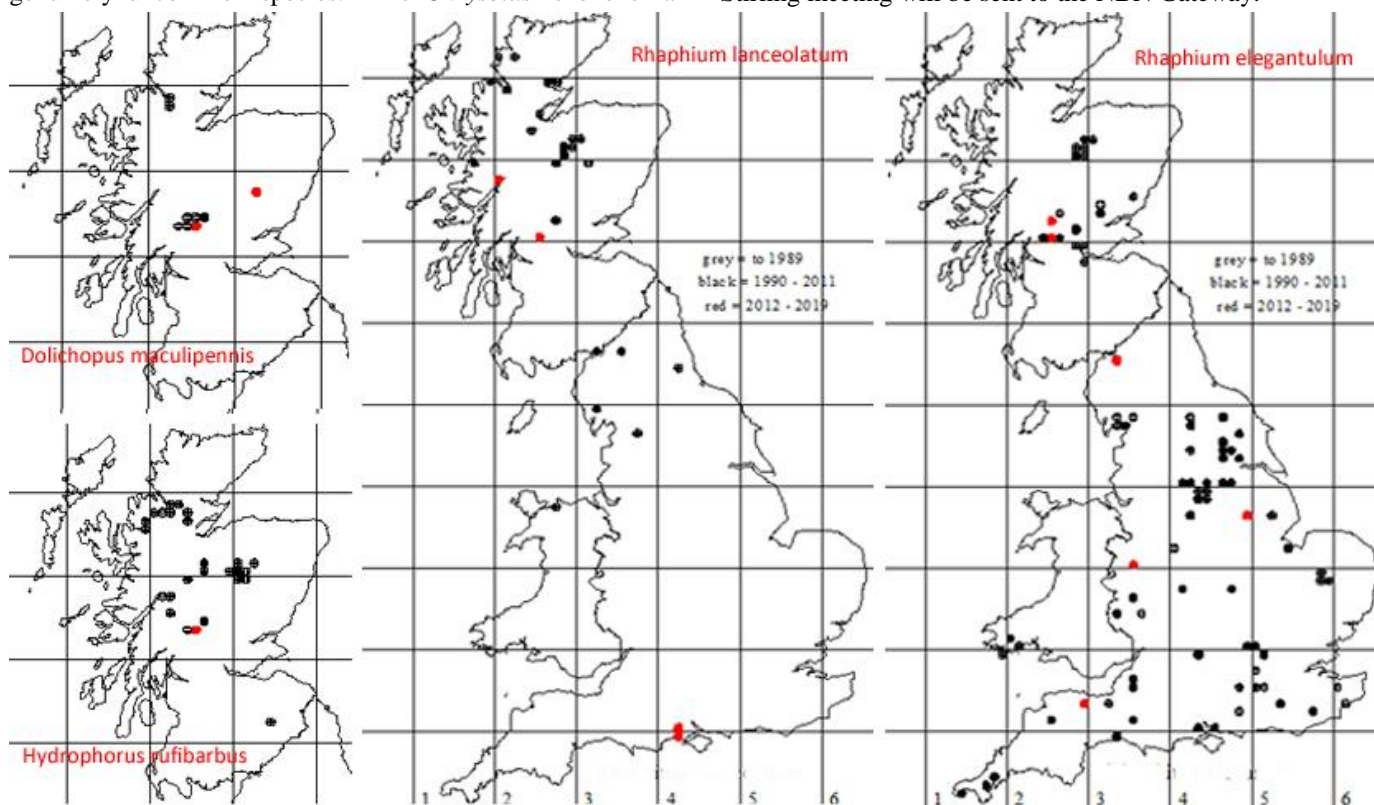
Saltmarsh at Kincardine Bridge (NS9286) and brackish lakes at Bothkennar Lagoons (NS9283) supported *Sympycnus septentrionalis* and *Syntormon pseudospicatum* in their expected habitat. The shortage of records of these ‘Data

Deficient' species is the failure to separate them from their abundant look-alikes (*S. pulicarius* and *S. pallipes*, respectively) – by me too until recently.

In the Loch Lomond area (hectads NS48, NS49) where the wetlands appear to be more mesotrophic, we found *Dolichopus nitidus* and *Chrysotus* cf. *pulchellus*. *D. nitidus* has an inexplicable distribution assuming records are correct, which is vaguely coastal in England and Wales (with exceptions) but inland in Scotland; it is a thinly spread and genuinely uncommon species. The *Chrysotus* is one of a

look-alike pair that includes *pulchellus*. Is it undescribed or described but unrecognisable from the literature, which is quite likely for the poorly illustrated *Chrysotus*? ... and which of the two types is the true *pulchellus*? The species we found is the northern species; the other is southern. Work in progress

There were plenty of other species that are apparently uncommon in Scotland but two-a-penny in England, and too many to discuss here. The Dipterists Forum data from the Stirling meeting will be sent to the NBN Gateway.



Scoring the difficulty of identification

Martin Drake

Several years ago Glenn Rostron took on the job of verifying records for the Cheshire LRC, and asked me for a reckoner indicating the difficulty of identifying each species, for instance as Martin Harvey has for his British Soldierfly & Allies recording scheme. I gave Glenn an off-the-cuff list but, with c. 300 species and having to deal with males and females separately, it is too big to include here. I hope to make this available on the E&D page of the Forum's website when I've improved it. The job is not straight forward since scoring has to refer to currently available keys, some like Fonseca's being way out-of-date, and others do not work as well as they should. Of course, when the dolichopodid handbook eventually gets published, everything will be dead easy.

Newsletters available from DF website

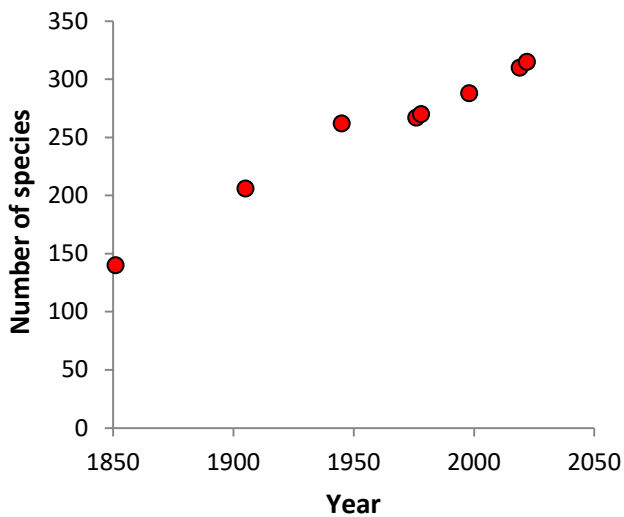
All the empid and dolichopodid newsletters (and all other scheme newsletters) can be downloaded as pdf from the Dipterists Forum website (www.dipterists.org.uk/recording-scheme-newsletters). Many thanks to Darwyn Sumner and Martin Harvey for this excellent resource. That's 35 years' of reading to catch up with!

The constant increase of British dolichopodids

Martin Drake

James Hutton's famous line ".... no vestige of a beginning, no prospect of an end." could be misappropriated for many natural phenomena. Here I do so for recording of dolichopodids in Britain since the earliest complete list (no vestige of a check-list before Walker, 1851) to the present day. The variation explained by the linear correlation between year and count, $R^2=0.95$, is far greater than most biological correlations and suggests no prospect of an end to the number of dolichopodids that may be found in Britain. However, like Hutton's 18th century attempt to estimate the age of the earth using then-known geological processes, I am certain to be proved wrong. But I hope that the graph stimulates you to keep recording, and don't assume that Fonseca's key (267 species) will give you the right answer.

I've added *Microphor* to these totals, and my 2020 value includes species not yet formally published. I have not adjusted for species that have been synonymised but the overall pattern will not change much, except perhaps early lists are over-estimates, in which case an asymptotic curve could be more realistically fitted.



Number of dolichopodids in Britain over 170 years.

Source	No. of Species
Walker 1851. <i>Insecta Britannica</i>	140
Verrall 1905. <i>List of British Dolichopodidae, with tables and notes.</i>	206
Kloet & Hinks 1945. British Dipt. Checklist	262
Kloet & Hinks 1976. British Dipt. Checklist	267
d'Assis Fonseca, 1978. RES Handbook	270
Chandler 1998. British Isles Dipt. Checklist	288
Chandler 2019. British Isles Dipt. Checklist	310
Drake 2020. Best guess	315

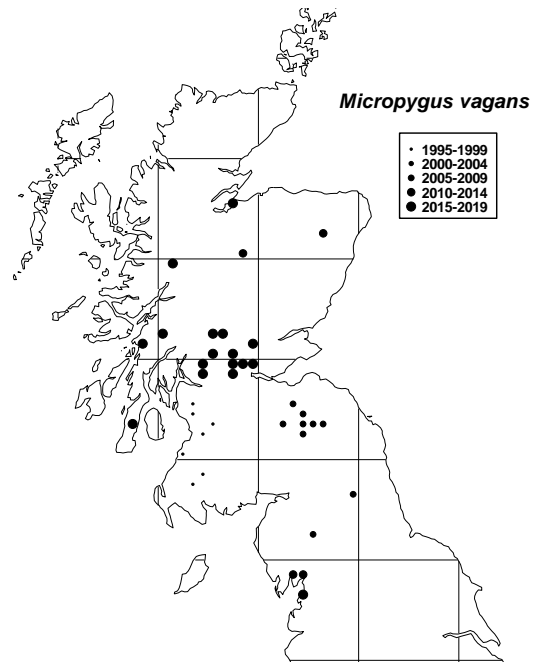
Micropygus vagans Parent (Dolichopodidae) update

Martin Drake

In *E&D Newsletter* 19, 1 (2014), I summarised the spread of this New Zealand species. Here's a new map with records divided into 5-year blocks. The earliest spate of records (tiny dots) were made at the Dipterists Forum summer meeting based at Ayr in 1995, and the latest batch in central Scotland (biggest dots) are mainly from the 2019 DF meeting based at Stirling. Rob Zloch found the southern-most record, from Lancashire in 2019. It has clearly spread widely and quickly, although of course we don't know what we had missed before Peter Chandler (1988, 1999) first alerted us to its presence in the British Isles (from Ireland). It's a dull little fly that you might mistake for a *Campsicnemus* but its wing has a pale crossvein that looks like a white spot. Rob Zloch has a good photo of one of his males at <http://www.northwestinvertebrates.org.uk/2020/03/>

Chandler, P. 1988. Three *Campsicneminae* recently discovered in Britain and Ireland. *Empid and Dolichopodid Study Group Newsheet* 5, 6.

Chandler, P.J. 1999. *Micropygus vagans* Parent (Diptera: Dolichopodidae), a New Zealand fly in the British Isles. *British Journal of Entomology and Natural History* 12, 215-220.



Recent literature (dolichopodids)

Chursina, M.A. 2019. Convergent evolution of sexual dimorphism in species of the family Dolichopodidae (Diptera). *Biodiversitas* 20, 2480-2485.

Chursina, M.A. & Grichanov, I.Ya. 2019. Analysis of the differences between *Syntormon pallipes* and *S. pseudospicatus* (Diptera: Dolichopodidae): morphological and molecular data. *Zoosystematica Rossica* 28, 305-316.

Chursina M.A., Negrobov O.P. 2020. Legs morphometric characters of the *Dolichopus* Latreille, 1796 species (Diptera, Dolichopodidae). *Samarskii nauchnyi vestnik* 9, 106-112.

†Crossley, R. 2019. Notes on the sub-family Hydrophorinae (Diptera Dolichopodidae) in Yorkshire. *The Naturalist* 144, 6-11.

†Crossley, R. 2020. Notes on the genus *Rhaphium* Meigen, 1803 (Diptera Dolichopodidae) in Yorkshire. *The Naturalist* 145, 67-73.

† These two papers have not yet been released on the YNU website but pdfs are available from Roy Crossley (roycrossley@btinternet.com)

Drake, C.M. 2019. *Nematoproctus praeseclusus* Loew (Diptera, Dolichopodidae) new to Britain, found together with *N. distendens* (Meigen), and notes on their habitat preferences. *Dipterists Digest (Second Series)* 26, 151-160.

Drake, C.M., Crellin, S.M., Jones, N.P., Spilling, C.R. & Wolton, R.J. 2019. Diptera at two inland saltmarshes in Cheshire and Staffordshire. *Dipterists Digest (Second Series)* 26, 73-79.

Kechev, M. 2019. Predatory flies of the family Dolichopodidae (Diptera: Empidoidea) from forest and riparian habitats in Bulgaria. In: *Proceeding Papers "150 Years of Bulgarian Academy of Sciences"*. Sofia, 47-54.

Selivanova, O.V., Negrobov, O.P. & Maslova, O.O. 2019. New data on the systematics and fauna of *Dolichopus subpennatus* D'Assis Fonseca, 1976 and *Dolichopus pennatus* Meigen, 1824 (Dolichopodidae, Diptera). *Acta Biologica Sibirica* 5, 111-114.

Zloch, R. 2020. *Micropygus vagans* (Diptera) reaches north Lancashire. North West Invertebrates blog 43903.

Key to female *Teuchophorus* (Dolichopodidae)

Martin Drake

This is a draft for the forthcoming handbook. d'Assis Fonseca's key (1978) works if you are lucky but will fail as often as it works. After a bit of a struggle, I have associated females with males and worked out what they look like. I took several standard leg measurements (tibia, tarsal segments, etc) of 11–14 specimens of each species and put them through principal component and discriminant analyses. While *simplex* was clearly different from the others using these measurement, *monacanthus* and *spinigerellus* formed one unseparable groups, and *calcaratus* and *nigricosta* formed another such group. However, the first of these pairs are easily separable on other characters, whereas the second pair are not. My key will therefore sometimes fail but perhaps less often than Fonseca's – at least the first three species should be easily identifiable (*spinigerellus* is the only one with a violet frons, *monacanthus* is the only one with clearly dark coxae and metepimeron, and the rest have pale coxae and metepimeron but, of these *simplex*, has relatively long hind tibia 4 times longer than the basitarsus rather than less than 3.7x in the other two). Everything is variable and I have specimens that I cannot identify. Reliance on careful measurement of lengths helps but is off-putting and there is plenty of overlap between species. Hairs and dusting are usually workable characters on tidy specimens. Apologies if you have not caught up with the latest morphological terms (tarsomere = tarsal segment; metepimeron = sclerite above hind coxa).

- 1 Hind femur in basal half with dorsal fringe of longer hairs at base, as long as *tibia* (not femur) shaft's width, grading to shorter distally; hind basitarsus slightly shorter than second tarsomere (0.7–1.1 times but rarely >1.0); hind tibia relatively longer than basitarsus (3.5–4.6 times, rarely less)..... 2



- Hind femur dorsal fringe scarcely differentiated, hairs much shorter than *tibia* shaft's width; hind basitarsus slightly longer than second tarsomere (0.9–1.1 times but rarely <1.0); hind tibia relatively shorter than metatarsus (3.0–3.7 times, rarely more). 4

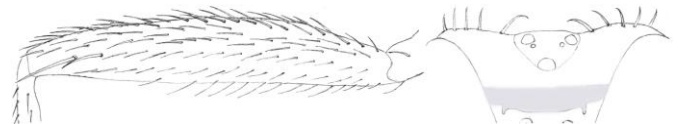


- 2 Frons vivid metallic violet, almost glossy, dusting restricted to narrow anterior strip; dorsal fringe of hind femur of two rows of equally long hairs. *spinigerellus*
- Frons green or greenish-blue, but not steely purple-blue, either shining or extensively dusted; dorsal fringe of hind femur of a single row of long hairs, adjacent rows with obviously shorter hairs. 3

- 3 Mid coxa and sometimes hind coxa darkened, at least basally, metepimeron dark, hind femur with extensive dark smudge dorsally; hind tarsus mainly dark; mid coxal setae and hairs slightly browner; hind tibia relatively shorter than basitarsus (3.6–4.1 basitarsus length); front basitarsus relatively longer than second tarsomere (2.2–2.9 times). [Frons extensively dusted, leaving separated small shining lateral areas, as *nigricosta* below].....
..... *monacanthus*

- Mid and hind coxae, hind femur and metepimeron clear yellow; hind tarsus mainly yellow; mid coxal setae and hairs pale yellow; hind tibia relatively longer than its basitarsus (4.1–4.6 times longer); front basitarsus relatively shorter than second tarsomere (1.8–2.3 times) [Frons mainly shining, dusting restricted to narrow anterior strip, as *calcaratus* below.] *simplex*

- 4 Hind femur with pale ventral hairs almost as long as dark dorsal hairs, easily discernible; frons sub-shining and scarcely dusted either side of ocellar triangle and for half distance between front ocellus and antennae, dense dust restricted to strip just behind antennae, better seen in oblique lateral view. [front basitarsus with ventral hairs usually as long as shaft's width, but may sometimes be shorter.] *calcaratus*



- Hind femur with pale ventral hairs clearly shorter than dorsal dark hairs and very fine; frons dusted from antennae to front ocellus, but sub-shining either side of ocellar triangle. [front basitarsus with ventral hairs usually shorter than shaft's width.] *nigricosta*



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