

### Empid and Dolichopodid Study Group Newsheet No 3

#### Editorial

We are pleased to include in this Newsheet Jonathan Cole's paper which sheds light on some of the more difficult species groups of Dolis. We are indebted to Jon for this contribution which nicely complements Peter Chandler's paper on Empids circulated with the last Newsheet. The note on Xanthochlorus luridus is timely and we are grateful to Peter Dyte for drawing this new addition to the British list to our attention.

Mike Pugh has kindly allowed us to copy the alphabetical lists of genera which he has persuaded his computer to sort out for him; these will be very useful for reference purposes. Our thanks too, to Peter Hodge for sharing his collecting experiences in Sussex, and to David Horsfield for permission to publish his note on Hydrophorus rufibarbis. Iain MacGowan's interesting revelation of a quite distinctly separate distribution pattern for two closely related Dolis in Scotland is included with the hope that it will stimulate comment from other readers.

These are the varied kinds of contribution that will ensure the success of the Newsheet and upon which we can all build up a fund of knowledge, so please keep them coming in.

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#### Empids in Sussex

Having read about Empids in Yorkshire and Wales, how about a complete contrast - Sussex. Firstly though, may I outline my history as a dipterist so as to reassure other beginners that they are not alone.

As a coleopterist with an interest in "other orders", the appearance of "British Hoverflies" finally tempted me to start collecting Syrphidae. Gradually I began to take interest in other families but until late in 1985 I strongly resisted the temptation to collect vast masses of obscure flies which I had absolutely no hope in ever naming. However, armed with Collin and Fonseca I soon started to acquire a taste for Empids and Dolis and I now confess to being a confirmed "Empidologist" (what would our womenfolk think if we called ourselves "Dolieologists"!).

Now for the flies - certainly my first real season of studying Empids and Dolis has produced a number of so-called rarities; however it is evident from discussions with other dipterists that several species regarded as very scarce by Collin are in reality much more common (at least in this part of Britain). In East Sussex, Empis planetica was one of the dominant spring species and E. praevia certainly not very uncommon. Nevertheless I do have a good roadside locality for Empis decora not two miles from my home (they could be swept off Ranunculus flowers a dozen at a time during June). Another rare species, Empis volucris, was present in several woodland localities on hogweed umbels during the second week of July. Rhamphomyia subcinerascens was abundant on sallow catkins in a marsh near Uckfield in late April; a week later only R. sulcata could be found.

From this evidence it appears to me that many rare species are often missed because their flight period is so short. An interesting project might be to log this apparent rapid turnover of species in one locality on a weekly basis throughout the summer.

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## DOLICHOPODIDAE DIFFICULTIES

The R. ent. Soc. handbook opened up the Dolis for many people, but a number of difficulties remain, and some which I have encountered are discussed below. The Dolichopodidae volume of Faune de France (Parent 1938 part 35) is still a useful backup with many figures and descriptions but is no help for females where a lot of the difficulties lie. The relevant parts of Die Fliegen der Palaearktischen Region (Negrobov and Stackelberg 1972-1977) contain the only sufficiently detailed figures of Medetera and Thrypticus genitalia to confirm doubtful males.

Three species have been added to the British list since Kloet and Hincks (1976) check list and these are included in the Handbook - Dolichopus subpennatus Fons., Poecilobothrus majesticus Fons. and Medetera oscillans Allen, but others are known as noted below under Medetera, Sympycnus, Micromorphus, and Achalcus.

Dolichopus nubilus/latelimbatus females. The common nubilus is more variable than the key suggests and I do not think that isolated females can be separated from latelimbatus with certainty.

Medetera. This is not an easy genus and doubtful males should have the genitalia checked. Cleared preparations at 100 times magnification at least is required, and the 'Die Fliegen' genitalia figures.

New species will be found in Britain, I have a female near borealis but no associated males, and a male found in Scotland among infumata to which it runs in the key, but differs most obviously in having pale halteres. It has not been named yet and is probably undescribed.

If you find males with the postical vein (m3+4) thickened, be careful at couplet 11 in the Handbook key. The only specimens I have seen (taken by Roy Crossley and Ivan Perry) did not clearly fit either alternative, but the genitalia proved them to be inspissata. The shape of the vein thickening does not appear to be reliable.

Thrypticus. The two least scarce species in my experience, tarsalis and bellus require great care and male genitalia should be checked with the 'Die Fliegen' figures.

Rhaphium. Some females of the group without a hind coxal bristle will cause indecision in spite of the alternative key, which I find easier to use. Leg colour tends to be more variable than suggested, eg nasutum sometimes has clear yellow mid femora. Female crassipes sometimes have a hind femoral preapical bristle which will put you wrong at couplet 5 (6 in the alternative key), but note the strongly sinuous discal vein.

Chrysotus cilipes. A distinctive male character not in the key is the black apical third of the hind tibia with a dense ventral brush of bristles.

Chrysotus neglectus/femoratus. Females are difficult to separate, the hind marginal contour of the wing is a doubtful character. The bulge before the postical vein is very slight in neglectus and not clearly distinct from femoratus or other species where there is usually a slight discontinuity, or at least a slight flattening of the smooth curve, at the vein apex. Parent (1923 Etude sur le genre Chrysotus. Ann. Soc. Sci. Bruxelles 42: 281-342) discusses the comparative differences between species in useful detail and says of neglectus/femoratus females that the posterior wing contour does not offer a clear cut difference, but he nevertheless uses the character in his later Faune de France key, presumably for lack of a better distinction.

Chrysotus gramineus group. I find that most people are very confused by the Handbook key to males from couplet 15 onwards. There are no adequate published figures of

Chrysotus genitalia and the hypopygial capsule with visible appendages are very uniform, but there are good specific characters in the processes at the tip of the aedeagus which may project from the capsule in dry specimens but are usually hidden and require preparation. All species examined (I have not seen melampodius, monochaetus or verralli) are readily separable on this character alone, except microcerus, varians, angulicornis and gramineus. I have seen several specimens in this group with character combinations which do not fit the keys and have concluded that the three Kowarz species are varieties of gramineus Fallen, and therefore synonyms of the latter and the British list of Chrysotus must be reduced by three. Kowarz's original descriptions were insufficient to separate them and both Verrall and Parent have commented on their unsatisfactory status. More recently Negrobov (1980. A revision of Palaearctic Chrysotus l. cilipes and laesus groups. Entomologicheskoye Obozreniye 59 (2): 415-420) states in the introduction that (among others) microcerus and varians have been found to be synonyms and that the synonymy will be argued in the second part of the study, but he does not say what they are synonyms of, and part two has not yet appeared.

Argyra perplexa/argentina. The key characters are not convincing, for instance the distance of the arista from the tip of the third antennal segment is variable. Males may be distinguished by the shape of the genital lamellae which are small but visible in dry specimens. They are narrow and parallel sided in perplexa, broader in the middle and tapering towards the tip (lozenge shaped) in argentina. Females are not separable with confidence.

Sympycnus desoutteri. This species has two distinct forms in Britain which probably deserve specific rank. The males of one form have hind tarsi with the third segment as in fig 207 in the Handbook, the other form has two very long hairs postero-basally on this segment and the apical four fifths of the segment is cut away posteriorly. The latter form has a slightly larger third antennal segment, and these differences are correlated with small but distinct differences in male genitalia. The two forms are widespread with the latter perhaps a little less common. Mr Fonseca was aware of these forms and considered them both to be desoutteri, but he did not examine genitalia. The continental species annulipes Meigen has similar long hairs on the hind tarsi but the third antennal segment is clearly longer (about 1½ times the width). Females associated with the two forms have not been distinguished.

Micromorphus. Keep all specimens, there are at least two species in Britain but their identity is uncertain and the literature is not helpful. Some years ago Dr Hedström divided the British Museum series of British Micromorphus into albipes (1 female only) and all others as 'species 2', but has not published anything. I have examined about 20 males, mostly from Wales and Scotland, and found two distinct genitalia types without intermediates. From genitalia drawings which I sent him, Dr Negrobov says that one species is claripennis Strobl and the other is similar to limosorum Vaillant. The situation may be resolved when this part of 'Die Fliegen' appears.

Achalcus flavicollis. Hedström has also divided the B.M. British series of this species into true flavicollis, sp 1 and sp 2, but has not published anything, so keep all specimens.

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### A third British species of Xanthochlorus

In a paper written in Russian, Negrobov (1978, Vest. Zool. 1978(2): 17-26) described five new species of Xanthochlorus from Tadzhikistan, the Northern Caucasus and Vladivostok. In the English summary to the paper he mentions that one of the species from the Caucasus also occurs in England. This species is X. luridus Neg. and material returned to the British Museum (Nat Hist) includes a male from HUNTS, Wood Walton 9-11.vii.1939 (R L Coe) labelled as a paratype of this species.

The male of X. luridus has the mesonotum mainly dark and the scutellum dark with a yellow border. It thus runs to X. ornatus in Fonseca's Handbook. However X. luridus can be distinguished from X. ornatus by features of the genitalia (which can usually be readily seen without dissection). In X. luridus the gonopod is curved and narrows towards the apex, whereas in X. ornatus it is straighter and broadened at apex. In this respect the genitalia of X. luridus are much more like those of X. tenellus than X. ornatus.

Males of X. luridus from the following localities were found among the X. ornatus in the B.M. (N.H.):— SUFFOLK: 1 ml SW of Barnham Little Heath (Burns, Hammond, Hutson and Huxley); Nr Santon Downham (same collectors); Brandon (presumed to be Brandon, Suffolk) (Verrall). WILTS: Salisbury (Cranston and Dear). POWYS: Crickhowell (Yerbury). The dates of capture extend only from 8.vii to 15.viii.

The females of X. luridus have the mesonotum largely yellow and are likely to be confused with X. tenellus rather than X. ornatus. This is clear from Negrobov's key, and the fact that females taken with males from both the Suffolk localities visited by Burns et al. had been determined as X. tenellus. I am not yet able to distinguish confidently the females of X. tenellus and X. luridus.

(PS. A few copies of the three oldish papers of mine listed in Fonseca's Handbook are available if anyone wants them.)

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### Hydrophorus rufibarb

This species is proving to be less rare now that its habitat is better known. David Horsfield of the Scottish NCC has given me permission to submit the following paragraph from a personal letter.

"Over the last four years I have accumulated many records of Hydrophorus rufibarb from various parts of the Highlands. It seems to be commonest in the Western Highlands where it is found over about 2000 feet on peaty pools in Nardus stricta snow-bed grassland. There are Nardus snow-beds as far south as Ben Lomond in the Highlands, though I was unsuccessful in finding H. rufibarb there, my farthest south being from Meall na Samhna. I have found it to be rare in the Cairngorms (3 or 4 records so far) and I believe this is because the Nardus snow-beds, though extensive there, have far fewer pools than in the Western Highlands. I have an odd record or two from springs, but these were just for single individuals whereas on peaty pools there are usually many individuals and males and females mating. I believe that the larva must require peaty mud for development."

I do not know whether their ranges overlap, but the following additional characters separating rufibarb from the similar but much more widespread bipunctatus will help to distinguish both sexes.

bipunctatus      short acrostichals and dorsocentrals (length of both  $1\frac{1}{2}$  times distance between bristles in a row). Short front coxal hairs (shorter than apical width of front tibia).

rufibarb          long acrs and dcs (2-3 times distance between bristles). Front coxal hairs distinctly longer than apical width of front tibia.

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### An interesting distribution pattern of two Dolichopodids

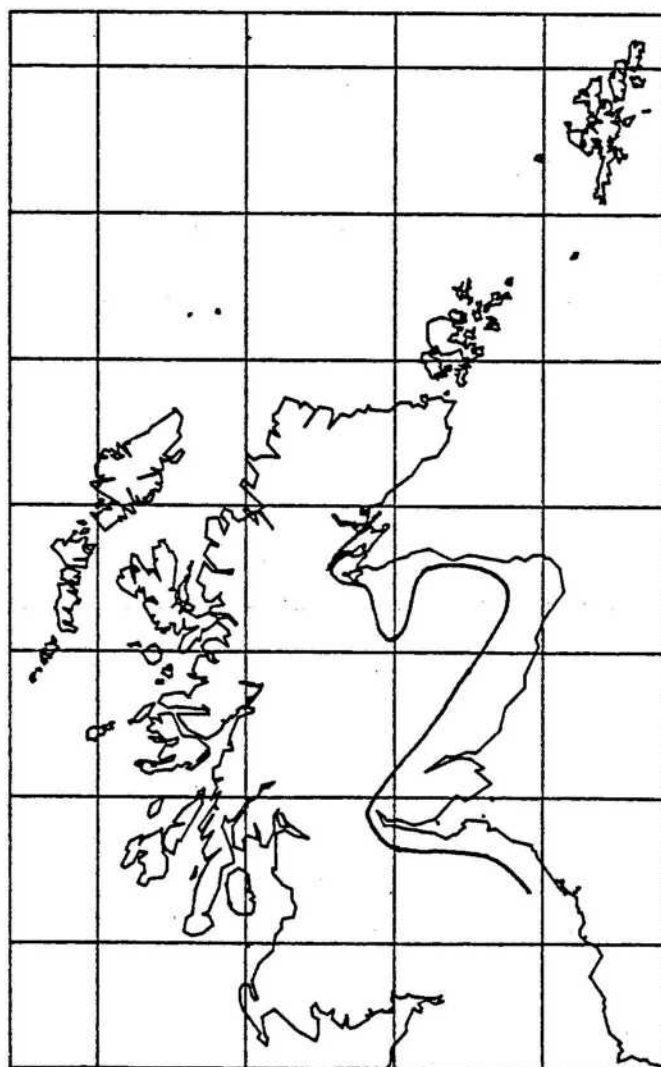
During the past few years I have been collecting records of Dolichopodidae in Scotland and mapping the distribution of each species on a 10Km grid square basis. One of the more interesting results of this exercise appeared when I compared the distribution of two closely related species, Dolichopus claviger and D. discifer.

In Scotland D. discifer is a very common species and has been recorded from over seventy five 10Km grid squares, D. claviger is not so common having been recorded from only eighteen 10Km grid squares. When the distribution of these two species was compared it was found that there was virtually no overlap; D. discifer is found to the west of the line on the map whereas D. claviger is found to the east. In the area around the Moray Firth and in Speyside the two species have been recorded as occurring in the same grid squares but in central and southern Scotland the distance between the two species is greater. There is a record of D. claviger from the Solway coast but records from this area are few and the situation is unclear.

It would be interesting to hear from other readers of the Newsheet whether a similar pattern is found elsewhere in the British Isles as far as these two species are concerned.

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Distribution of Dolichopus claviger and D. discifer in Scotland. D. claviger east of the line, D. discifer west of the line.



# **Empididae: alphabetical list of genera**

Genera	Subfamilies
1 Aclonempis	Empidinae
2 Amydroneura	Empidinae
3 Anacrostichus	Empidinae
4 Bicellaria	Ocydromiinae
5 Chamaedipsia	Clinocerinae
6 Chelifera	Hemerodromiinae
7 Chelipoda	Hemerodromiinae
8 Chersodromia	Tachydrominae
9 Clinocera	Clinocerinae
10 Coptophlebia	Empidinae
11 Dolichocephala	Clinocerinae
12 Drapetis	Tachydrominae
13 Dryodromia	Hemerodromiinae
14 Empis	Empidinae
15 Euthyneura	Ocydromiinae
16 Gloma	Empidinae
17 Heleodromia	Hemerodromiinae
18 Hemerodromia	Hemerodromiinae
19 Hilara	Empidinae
20 Holoclera	Empidinae
21 Hormopeza	Empidinae
22 Hybos	Hybotinae
23 Hydrodromia	Clinocerinae
24 Kowarzia	Clinocerinae
25 Kritempis	Empidinae
26 Leptempis	Empidinae
27 Leptopeza	Ocydromiinae
28 Lissempis	Empidinae
29 Lundstroemiella	Empidinae
30 Megacyttarus	Empidinae
31 Microphorus	Empidinae
32 Ocydromia	Ocydromiinae
33 Oedalea	Ocydromiinae
34 Oropezella	Ocydromiinae
35 Pachymeria	Empidinae
36 Pararhamphomyia	Empidinae
37 Philolutra	Clinocerinae
38 Phyllodromia	Hemerodromiinae
39 Platypalpus	Tachydrominae
40 Platyptera	Empidinae
41 Polyblepharis	Empidinae
42 Pseudoweidemannia	Clinocerinae
43 Ragas	Empidinae
44 Rhamphomyia	Empidinae
45 Stilpon	Tachydrominae
46 Symballophthalmus	Tachydrominae
47 Syndyas	Hybotinae
48 Syneches	Hybotinae
49 Tachydromia	Tachydrominae
50 Tachypeza	Tachydrominae
51 Trichina	Ocydromiinae
52 Trichonomyia	Ocydromiinae
53 Trichopeza	Clinocerinae
54 Weidemannia	Clinocerinae
55 Xanthempis	Empidinae

**Dolichopodidae: alphabetical list of genera**

	Genera	Subfamilies
1	Achalcus	Rhaphinae
2	Acropsilus	Campsicneminae
3	Anepsiomyia	Campsicneminae
4	Aphrosylus	Aphrosylinae
5	Argyra	Diaphorinae
6	Bathycranium	Rhaphinae
7	Campsicnemus	Campsicneminae
8	Chrysotimus	Campsicneminae
9	Chrysotus	Diaphorinae
10	Cyrturella	Medeterinae
11	Diaphorus	Diaphorinae
12	Dolichopus	Dolichopodinae
13	Hercostomus	Dolichopodinae
14	Hydrophorus	Hydrophorinae
15	Hypophyllus	Dolichopodinae
16	Lamprochromus	Campsicneminae
17	Liancalus	Hydrophorinae
18	Machaerium	Rhaphinae
19	Medetera	Medeterinae
20	Melanostolus	Diaphorinae
21	Micromorphus	Campsicneminae
22	Nematoproctus	Rhaphinae
23	Neurigona	Neurigoninae
24	Orthoceratium	Hydrophorinae
25	Poecilobothrus	Dolichopodinae
26	Rhaphium	Rhaphinae
27	Scellus	Hydrophorinae
28	Schoenophilus	Hydrophorinae
29	Sciapus	Sciapodinae
30	Sympycnus	Campsicneminae
31	Syntormon	Rhaphinae
32	Systemus	Rhaphinae
33	Tachytrechus	Dolichopodinae
34	Telmaturgus	Campsicneminae
35	Teuchophorus	Campsicneminae
36	Thinophilus	Hydrophorinae
37	Thrypticus	Medeterinae
38	Xanthochlorus	Campsicneminae

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