

EDITORIAL

The Sage of Wilberfoss has laid down the editorial pen (presumably in order to be better able to hold his pooter), and I, having had a two-year holiday, am picking it up. Roy has ably kept us all on the road and intends to enjoy a well earned rest (my phrase, not his own, I hasten to say).

I puzzle in the night watches over the question of the continuing popularity (if that is the right word) of the Empids and Dolies. None of the members of the various families would even merit an 'also ran' placing in the beauty stakes (if you doubt that, just glance again at Steven Falk's illustrations in the Hoverfly guide). Few of them oblige by being big enough to give themselves away at first glance; the great majority are innocuous and seem to be seeking anonymity. Nor do they attract attention by being parasitic, vectorial or even minor irritants. Yet more than most groups they absorb the time of many tireless enthusiasts, veterans and beginners alike, absorbedly crawling along the frontiers of knowledge with a hand lens. How inscrutable are thy ways
.....

Thanks are due, yet again, to all contributors who have found time, in dealing with their material, to tie up the loose ends, speculate on causes, effects and connections, and pool their knowledge for the wider good. The very longevity and frequency of the Newsheet testifies to your enthusiasm, and I judge that we can all learn something from each of the notes below. I am, however, prompted to wonder whether the Dipterists' Digest might not offer a useful vehicle for articles of this sort, reaching a wider audience thereby and helping to keep the Digest in being.

It is good to observe the level of sustained interest in Ds and Es, but do not be misled by the length and detailed analyses shown in some of the material we publish into thinking that your own meagre notes will be of no interest or value. If an observation in the field teaches you something it will probably have something equally valuable to say to others. All it takes is observation and a degree of literacy. If your editors should come to be overwhelmed with trivia we will shout loudly enough; until then, please assume that we, and all other readers of the Newsheet, have as much to learn as you.

Readers will recall the decision at the Annual Meeting in November 1988 to institute a pilot recording scheme, focusing on particular groups (Campsicnemus (s.l.), Hydrophorus and Empis (s.l.)) Roy Crossley offered himself as coordinator. I hope that records (on the new BRC site visit cards or GEN 13 'single species' cards) are beginning to come together. I know, however, from self-reproachful experience how much easier it is to collect and identify than to spend time on rigorous collation. 'A job for Winter evenings' one thinks; but 'the Hounds of Spring are on Winter's traces ...'

If I am to be honest I would say that I spend most time on the activities which have most appeal, and I am probably not alone in this foible. Which brings us back to the question I posed right at the beginning: why do we do it? Well, the answer is surely the same as that given to that other famous query: 'Because they are there'.

Please send material for the next newsheet to me at the address below, or to Roy Crossley; and thanks again for reading and contributing.

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A NEW PLATYPALPUS SPECIES IN THE BRITISH ISLES

Platypalpus rapidoides Chvala has been found recently in Scotland. In Collin (1961) this species would key out at Platypalpus rapidus (or Tachydromia rapida as it appears in the key). The following amendment is suggested to Collin's key in order to incorporate this new species.

- 9(10) Antennae with a short, very broad third joint (fig 55a); thoracic bristles dark; four posterior femora extensively darkened.
- 9a(9b) Anterior coxae, anterior femora, base of posterior femora and all of posterior tibiae yellow rapidus
- 9b(9a) All coxae and all femora apart from tip of anterior pair dark. Base of posterior tibiae darkened rapidoides

Despite being found in northern Scotland P rapidoides is not a purely northern insect but more a central and southern European species, being recorded from Belgium to the Mediterranean. This being the case, it could well turn up in other parts of the British Isles.

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THE HABITAT OF DOLICHOPUS ANDALUSIACUS

In Newsheet 7 Ray Poulding discussed the habitat of D andalusiacus and its possible association with coastal shingle banks close to reeds with reference to Slapton Ley and Looe Pool, while in Newsheet 8 Simon Grove notes that his Cornish record does not bear this out. I took several andalusiacus at Slapton in 1978, but all were from the inland end of Higher Ley on the edge of Reed beds adjacent to France Wood which is some distance in Dolichopus flight terms from the shingle of Lower Ley. The two other places where I have found andalusiacus are inland, a ditch with rank vegetation, Abingdon 1957, and reed beds at an old gravel pit at Little Paxton, Hunts 1974 (cited by Fonseca in the Handbook). Thus while it may favour a coastal habitat, there are enough exceptions to rule out any obligatory, or even very close, association with shingle banks, while reeds are a least as consistent a common fact.

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THE SEPARATION OF SOME ARGYRA MALES: ARE A. ARGYRIA AND ARGENTELLA DISTINCT SPECIES?

Meuffels, Pollet and Grootaert (1989) comment that possibly these two species must be considered as a single species since the distinction between them is made only on the basis of leg colour and other doubtful and probably varying features. The larger form, argyria, is darker and has relatively longer eye and leg hair and longer antennae, a phenomenon not uncommonly found within a species whose individuals vary much in size. I examined the male genitalia in the hope of finding some more objective characters to separate them and found that the capsule, hypandrium, aedeagus and paired appendages have no separating features, from the most robust argyria to the smallest argentella. Although I have not seen any indeterminate intermediate specimens I must agree with Meuffels et al that the two are doubtfully separate species. If anyone has any specimens that appear to be intermediate I would be interested to see them.

On the other hand I have looked at the genitalia of perplexa and argentina, the pair at the end of the Argyra key in the Handbook whose separating characters are not always convincing, and have found a well defined difference, both from each other and from argyria/argentella. Figure 1 shows the whole hypopygium of argentina from the left with the appendages pointing ventrally as in the dry fly. Figures 2 and 3 show only the gonopods and cerci of argyria/argentella and perplexa respectively. The main differences are in the (anatomically) ventral lobes of the gonopods. They are uniformly narrow and curved in argentina with an inner triangular process bearing a spine. In perplexa they are broad at the base and abruptly narrow to a curved point in the apical third. In argyria/argentella they are uniformly broad with a rounded tip. The outer dorsal lobes differ little from each other, the inner dorsal lobes differ more, but are more difficult to see and must be viewed from other angles. The hypandrium and aedeagus do not offer any separating features. The gonopod lobes are not usually visible in the dry specimen unless the capsule is pulled out and pinned away from the abdomen, but the difference in shape of the anal cerci between perplexa and argentina, which I noted in Newsheet 3, can usually be seen.

Peter Dyte tells me that in Becker's 1918 monograph on Dolichopodidae (which I have not seen) there are some rather poor genitalia figures of argentina, argyria and perplexa, but better than those in Faune de France (Parent 1938).

Reference

Meuffels, H., Pollet, M., and Grootaert, P. (1989). The dolichopodid fauna (Diptera, Dolichopodidae) of a garden habitat: faunistics, habitat preference, phenology and distribution. Bulletin de l'Institute royale des Science naturelles de Belgique, 58:83-94.

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Figure 1 Argyra argentina hypopygium, left side.

Figure 2 A. perplexa gonopods and cercus, left side.

Figure 3 A. argyria/argentella gonopods and cercus, left side.

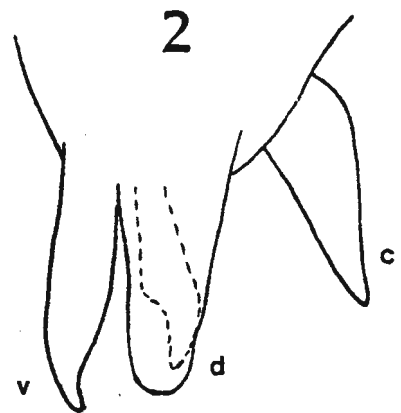
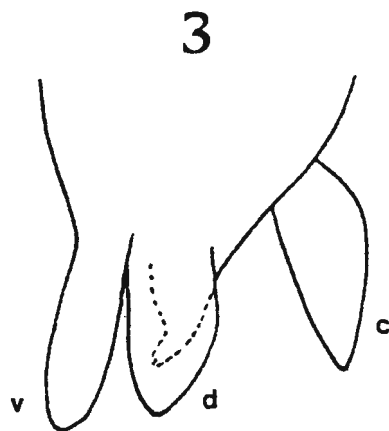
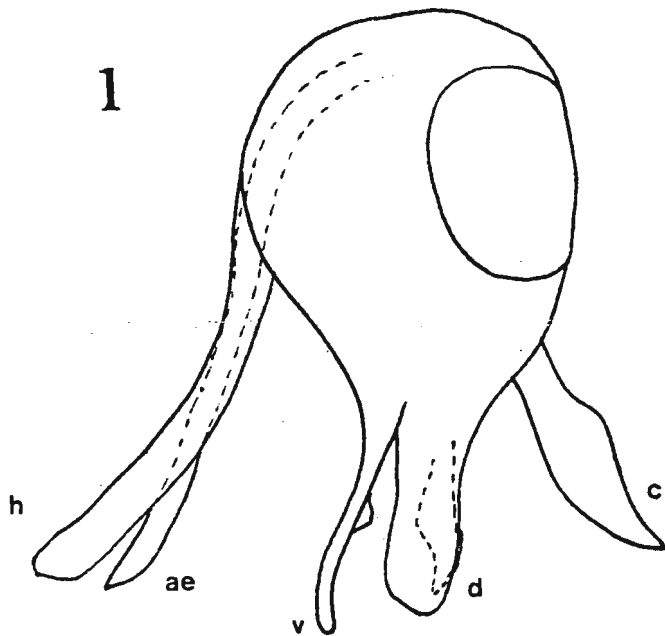
ae aedeagus

c anal cercus

d dorsal lobe of gonopod

v ventral

h hypandrium



RHAMPHOMYIA PLUMIPES A PLEA FOR RECORDS

According to Collin (British Flies: 6 Empididae) only two specimens of this species, both females, had been seen by him from Britain.

Phil Withers reported a singleton (no sex quoted), from a water trap at Malham (1983 Ent.mon.Mag. 119:34), but I have been unable to trace any others.

Recently, whilst examining specimens taken in NCC malaise traps at Spartum Fen, Oxon in 1988, I found a single male whose identification was later confirmed through the kindness of John Ismay, by comparison with specimens in the Verrall/Collin collection at the Hope Department. Incidentally, I did not find separation of this species from the very similar R.vesiculosa as simple a matter as it may appear from the key in Collin. No more specimens were found amongst several hundreds of empids examined and clearly this is a rare species. If anyone knows of further records I shall be pleased to have the details.

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HANDBOOKS FOR THE IDENTIFICATION OF BRITISH INSECTS

Mr d'Assis Fonseca's Handbook on Dolichopodidae was published by the Royal Entomological Society in 1978. Until recently copies were obtainable from the Natural History Museum, but it has come to my attention that stocks are exhausted and the volume is now unobtainable from that source.

Other suppliers whom I have approached are likewise out of stock, and enquiry made of the Royal Entomological Society has elicited the news that there are no plans to reprint the volume. It would seem, therefore, that newcomers who wish to take up the study of this family will have to seek out second-hand copies in future.

At the November meeting your thoughts will be sought on whether a positive response is possible. Would there be a demand for a reprint, bearing in mind that all those currently interested in dolies have a copy already? Alternatively is it practicable and economically viable to produce a new key with updated species notes, which everyone will want? The latter course requires an author and illustrator!

SYNONYMY AND VARIABILITY IN SYMPYCNUM

In his Handbook Mr Fonseca omitted Sympycnum annulipes (Meigen) from the British list because all specimens he has examined and that were supposed to be of that species proved to be S. desoutterii Partent. In Newsheet 3 Jonathan Cole noted that S. desoutterii in Britain has two distinct forms of which the females cannot be distinguished (yet). He suggests that these different forms may deserve specific rank. He finishes with comparing the British S. desoutterii with the continental species S. annulipes.

However, a publication of Mr H J G Meuffels with Vilt, the Netherlands, may put this matter in a different light. In 1981 he published his findings after examining specimens of populations of different localities, mainly in the Netherlands. He found a gradual transition from the longer third antennal segment of S. annulipes to the shorter third antennal segment of S. desoutterii. Since in his view no other distinguishing

features were known and no ecological differences were found he concluded specimens of S. annulipes and S. desoutteri in fact belong to the same species. Moreover, he concludes that this single species has a senior synonym in S. pulicarius (Fallen). On the continent this synonym has now widely been accepted and S. pulicarius is considered a widespread species with a variable shape of the third antennal segment.

During a further investigation of the status of the two British forms of "S. desoutteri" the above mentioned synonymy and variability should be kept in mind. It may well be that the two different forms represent a further variability of the species S. pulicarius.

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References

Fonsesca, E.C.M. d'Assis, 1978. Diptere Orthorrhapha Brachycera. Dolichopodidae. Handbook Indent. br. Insects 9(5): 1-90.

Meuffels, H.J.G., 1981. Status of Sympycnus annulipes (Meigen, 1824) and S. desoutteri Parent, 1925 (Diptera, Dolichopodidae). Ent. Ber., Amst. 41: 54-55.

Ed note by Johnathan Cole

I was interested to see Meuffels' paper on Sympycnus antennae, and I accept that desoutteri must be considered a synonym of pulicarius (= annulipes).

Since my note in Newsheet 3 I have examined many more specimens of both tarsal varieties of pulicarius (type A without the two long hairs at the base of hind tarsus 3 or the more flattened polished posterior surface of segments 3 and 4, or type B with these characters) and I have found that the male genitalia are more variable than I had thought and that the differences between types A and B are not so distinct. I do not now consider that they may be good species, but it would be interesting to know what the status of the tarsal varieties is on the continent because they appear to be ecologically distinct in Britain and there is some correlation with antennal length. Is there any information on the continental distribution? In the British fauna, type A is common everywhere from the north of Scotland to Cornwall and from Wales to East Anglia, but I have only seen type A from Scotland and Wales. My series of Type A are all like Meuffels' antennal figures 7-8, while type B tend to be more pointed like figures 5-6, but there is one exception - a type B with short antennae like figure 9. The long annulipes type antenna of figure 1 does not seem to occur in Britain.

A PUTATIVE SWAIN FOR SYNTORMON SETOSUS

Speight and Meuffels are to be congratulated on find Syntormon setosus Parent in Ireland (1980 Irish Nat. J. 23 : 92-7). As they point out this species is known only from females, and is one of the small group of Syntormon species (including S. macula and S. miki whose females have a pair of down-curved bristles on the face).

In July 1988, I collected Dolies near Vancouver, Canada during my first visit to a Pacific saltmarsh. Among a few familiar friends like Dolichopus plumipes and Rhaphium consobrinum, and a number of species I had not met previously, was Syntormon flexibilis a species previously recorded from Canada which was present in both sexes. S. flexibilis is a 'tramp species'. Since it was first described from Taiwan by Becker in

1922 it has been found in a number of widely separated localities, eg Hawaii and Saint Helena (Dyte, 1967, Entomologist 100 : 174-6), and it has been redescribed as a 'new' species on several occasions. Dr Dan Bickel has a paper in press discussing the synonymy of this species. The purpose of this note is to point out that the females of S. flexibilis agree very well with published descriptions of S. setosus and the two may well prove identical. The climates of British Columbia and the British Isles are not dissimilar, so if S. flexibilis reached the UK it might well become established. The male of S. flexibilis is readily distinguished from those of the species known from Britain. It has a prolongation at the apex of the second segment of the hind tarsus which overlaps the base of the third segment.

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PROBLEMS WITH SYSTEMUS

The species of Systemus are more often reared than taken as adults. This means our data on their occurrence is limited, and some adult specimens in collections are rather teneral and shrivelled. I now put most adults in alcohol and recommend this.

Limited data may have led to prematurely narrow views on the ecological needs of the species. The larvae occur in oozing sap wounds and moist treehole debris. Tree holes tend to occur in old trees and old trees occur in ancient woodland. The presence of Systemus in ancient woodland is thus not surprising, but it has yet to be demonstrated that any species is confined to and hence indicative of ancient woodland.

The species which occur in Britain have been reared from a variety of trees. Two species have been reared from the same treehole on several occasions. The tree hosts known to me from the literature and specimens I have reared are as follows:-

- S. bipartitus elm.
- S. leucurus beech, chestnut, elm, wych elm, sycamore, and yellow buckeye (Aesculus flava).
- S. pallipes (sens lat.) ash, beech, birch, chestnut, elm, horsechestnut, poplar, sycamore, willow, yellow buckeye, and a conifer ("Sapin" see below).
- S. scholtzii (sens lat.) beech, birch, chestnut, elm, horsechestnut, holly, walnut, and a conifer ("Sapin").
- S. tener beech, oak, walnut.

In addition the late F W Edwards reared an unidentified species from hornbeam, and several North American species have been reared from tulip tree (Liriodendron tulipifera). In south Portugal on 16.V.1989 I took an adult female of S. pallipes in a wet hollow in a large cork oak (Quercus suber) so this tree represents a further very probable host.

In 1978 Vaillant described two new species of this genus from the French Alps. These were S. alpinus and S. pallidus which were described as closely related to S. scholtzii and S. pallipes respectively. In my view the validity of these species has yet to be established. If their status is confirmed then the host trees previously recorded for S. pallipes and S. scholtzii will need to be re-evaluated, but for the present I have

included tree hosts reported for S. pallidus and those for S. pallipes sens lat. and those for S. alpinus with S. scholtzii sens lat.

S. alpinus was described from a unique male reared from wet debris from a conifer ("Sapin"). Speight (1987) interprets Sapin as Picea abies ie Norway Spruce, but I am doubtful about this. Vaillant says that whereas he found wet cavities in "Sapins" he has not observed them in "d'Epiceas" which I suspect means he found them in fir but not spruce. In any event common names of trees like spruce, fir or pine are often applied to several species in a genus and often used when the particular species is in doubt. It is thus unwise to convert them into scientific names referring to particular species. This is why common names are used in the tabulation above.

The unique male of S. alpinus differed from S. scholtzii only in characters of the hypopygium but Vaillant considered it might represent an alpine form distinct from the north european S. scholtzii. I have recently reared three males from wet tree-hole debris in beech. One from Windsor Great Park, Berks (SU 981 728), and two from Nr Ruttersleigh, Som. (ST 254 163). All three accord well with Vaillant's description of S. alpinus. In particular the genitalia compare well with his figure. This demonstrates the S. alpinus is not a form restricted to conifers or to the Alps. However it appears that Vaillant did not examine any specimens of S. scholtzii, but relied on the description and figures of Bequaert (1955). Bequaert's drawing may contain errors or be based on an aberrant specimen so until specimens conforming with his figures are found there is no evidence that two species are involved. Moreover if such evidence is forthcoming it will be necessary for the types of S. scholtzii to be examined before that name can be properly applied to one of them. The correct, ie original spelling of this name is scholtzii not scholtzi.

The problems regarding S. pallipes and S. pallidus (besides their confusing similar names) are more complex. Vaillant reared both sexes of his species S. pallidus from both "Sapin" and chestnut ("Marronnier"). He distinguished that the male from that of S. pallipes by (1) the proportions of the third antennal segment, (2) the chaetotaxy of the tibiae, (3) the shape of the cerci, and (4) the surstyli. Again there is no evidence that Vaillant examined any specimens of S. pallipes, but rather he seems to have relied on the description of Parent (1938 p478-9) which included the only figures of this species then published.

The differences claimed between S. pallipes (sensu Parent) and S. pallidus were:- (1) Both have the third antennal segment 4 times as long as wide (though Vaillant's figure of pallidus looks more like $3\frac{1}{2}$ times); however in pallipes this segment evenly narrows to apex, whereas in pallidus there is a region of more abrupt narrowing at about apical third giving a bottle shape instead of an elongate isosceles triangle. The arista is $\frac{3}{5}$ the length of the third antennal segment in pallipes compared to about $\frac{3}{4}$ in the figure of pallidus (the text says "2 fois plus longue"; perhaps $\frac{2}{3}$ was intended). (2) Mid Tibia 3 ad, 2 pd in pallipes, 2 ad, 2 pd + preapicals in pallidus. Hind tibiae 5-6 dorsals in pallipes, 1 ad, 5-6 pd in pallidus. (3) External lobe of cerci wide throughout length in pallipes and pointed at the apex, but widened only distally and rounded at the apex in pallidus. (4) surstyli lacking or very short in pallipes and more prominent in pallidus. Of these four distinguishing characters, (3) and (1) seemed most clear cut. The cerci are large and their basic shape can usually be seen without dissection, so when Vaillant's paper appeared I checked the male S. pallipes in the BM(NH) and the Collin-Verrall collection at Oxford. Like my own few males all seemed to have blunt cerci widening only towards the apex as in S. pallidus. I concluded that this was the species in Britain, or alternatively, Parent's figures were

of very poor quality and there was in reality only one species. Most British males also seemed to have the bottle-shaped third antennal segment (Character (1)).

Recently Speight (1987) and Speight and Meuffels (1989) have reported S. pallipes (sens lat.) from Ireland. They refer Irish specimens to S. pallidus Vaill. and claim to have identified both this species and S. pallipes s.s among older material from England. Their concept of S. pallipes is based on von Roser material in the Paris Museum, and they state that Parent's figure of the male terminalia is not very accurate. They provide characters for distinguishing the two 'species', but of the four distinguishing features given by Vaillant they ignore (1) and (4) presumably because they consider these lack value. They illustrate character (3) for both 'species' but in doing so demonstrate that both correspond to Vaillant's description for S. pallidus (ie have cerci widening towards the rounded apex). In fact, Vaillant's figure of the cercus of S. pallidus shows a shape intermediate between the shapes figured by Speight and Meuffels (1989) for S. pallidus and S. pallipes! Of the four criteria which Vaillant used to distinguish his species from S. pallipes, this leaves only character (2) ie minor differences in tibial chaetotaxy.

Speight and Meuffels also provide additional separation characters involving the colour of the clothing bristles on the underside of the middle tibia, the length of the hind cross vein compared to that of the apical section of vein 5, and the distal end of the gonopod. All the differences claimed seem to be rather slight and although I have only 5 males of S. pallipes (from three localities) four of them seem to have a mixture of the characters suggested as typical of one or the other species. I suspect this is nothing more than intraspecific variation. If such minor differences are to be used to distinguish taxa we need to have some idea of the range over which they vary within the taxa proposed.

In essence Vaillant described his species as new because it had antennae and cerci which differed very considerably from those described for S. pallipes by Parent. No specimens comparable to Parent's description have been found, and so there is as yet no good evidence for regarding S. pallipes as a complex of two species. If however such evidence is forthcoming, it will be necessary for the types of both S. pallipes von Ros and S. adpropinquans Loew (currently regarded as a synonym of S. pallipes) to be examined so that these names are properly allocated.

References

- Bequaert, M., 1955, Mem. Soc. R. ent. Belg. 27 : 82-91.
Parent, O., 1938, Dipteres Dolichopodidae. Fauna de France 35.
Speight, M.C.D., 1987, Ir. Nat. J. 22 : 250-252.
Speight, M.C.D. and Meuffels, H.J.G., 1989, Ir. Nat. J. 23 : 92-97.
Vaillant, F., 1978, Bull. Soc. ent. Fr. 83 : 73-85.

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A KEY TO SOME FEMALE EMPIS

At the end of this newsletter there is a separate sheet with a key that helps clarify part of Collin's key to Empis. Our thanks are due to David Denman.

A DIPTERIST IN DEVON

A distribution map of dipterists, based on data in the Bulletin address list, would make surprising reading. Why does the distribution appear so skewed, even allowing for the fact that we hardly constitute a representative sample of the population. Why does the vast county of Devon contribute only three to the current list. If Diptera need dipterists, maybe dipterists need sociologists to do surveys and create denser maps. One day someone will tell me when the apparent distribution of the latest, newest, most fashionable Empid tells us more about the fly than about the flycatchers.

Be that as may, I have convinced myself that Devon could become a splendid source of delights, a vertiable cornucopia. Within easy reach of my house I find mixed woodland, wetland, saltmarsh, moorland, estuarine, freshwater, meadowland and others. In addition the area has year round temperatures several degrees above mean and (in an average run of years) 60 inches of rainfall annually. I am trying to discipline myself to note, in addition to the usual features, the time of day and the prevailing weather.

The following list excludes the common and widespread species:

Machaerum maritimae
Syntormon pallipes
Hilara fuscipes
H. platyura
Platypalpus optivus
P. agilis
P. aristatus
P. calceatus
P. notatus
P. pallidiventris
P. extricatus
P. albifacies
P. annulipes
Pararhamphomyia filata
Xanthempis punctata
Dolichocephala guttata
Chelifera praecatoria
Chelipoda vocatoria
Megacyttarus crassirostris
Oedalia Holmgreni
Microphorus crassipes
Aclonempis albohirta
Empis pennipes
Xanthochlorus ornatus
Dolichopus strigipes
D. unguatus
D. latelimbatus

Roy Crossley tells me that S. pallipes may prove to be S. pseudospicata, but I have not yet checked that out. My aim is to build up as complete a dossier as possible on the sites I regularly visit year-round. In a few years time it may begin to be worthwhile to put together a publication on the Empididae of Devon, bringing together all known recordings for the County.

Anthony Bainbridge.

KEY TO FEMALE EMPIS

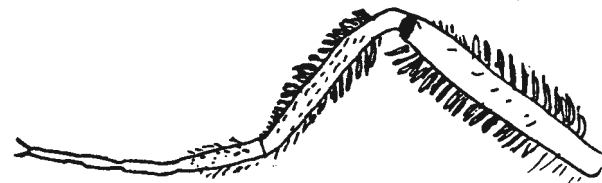
The key to female Empis in Collin is divided on the basis of haltere colour. Clear yellow and jet black halteres are straight forward but the brownish-yellow halteres are more difficult to place. I set out to remove this uncertainty and to add further characters to Collin's key. Throughout the key I have used the phrase "pennate" which refers to leg hairs which have become expanded both in width and height.

KEY TO FEMALE EMPIS WITH LIGHT COLOURED HALTERES

- 1 Front of thorax with fine pale hairs
Long pennate bristles above tip of hind tibiae
Four scuteller bristles
Empis decora Meigen (N)
- Front of thorax with normal black bristles 2
- 2 Four scuteller bristles 3
- Two scuteller bristles 8

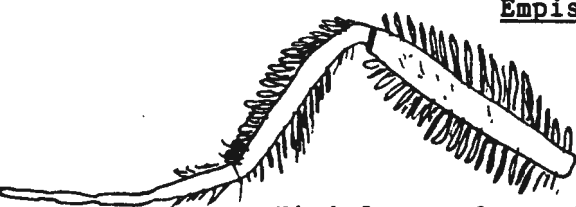
- 3 Abdomen, prothorax, coxae and metapleurae fan with pale hairs only
Legs yellow-brown
Hind tibiae pennate above
Empis nuntia Meigen

Hind tibia of nuntia



- Abdomen, prothorax, coxae and metapleura with black hairs with, at most, black and yellow hairs in equal numbers
Legs black 4

- 4 Hind tibiae strongly pennate for whole length above (dorsal) thorax black
Basal joint of front tarsi pennate above
All legs strongly pennate especially hind femur which has a pennate fringe of some height above and below
Wings dark
Empis pennipes Linnaeus

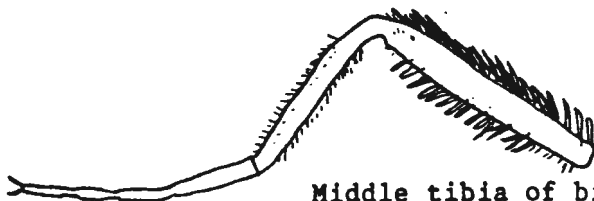


Hind femur of pennipes



Basal joint (front tarsi) of pennipes

- Hind tibiae pennate above for less than whole length 5
- 5 Middle tibiae with a pennate fringe above extending more than halfway along the tibia 6
- Middle tibia not pennate above only with short bristles 7



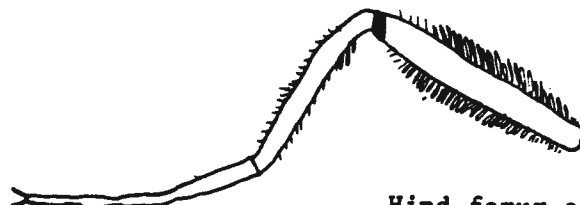
Middle tibia of bicuspidata

- 6 Front tibiae pennate above
Wings dusky
Empis rufiventris Meigen (N)
- Front tibiae not pennate above only with slightly flattened hairs
Wings very dark
Empis limata Collin (R1)

- 7 Middle tibiae with a few short pennate hairs beneath at base
Empis woodi Collin (R3)
 This species usually has four scuteller bristle but has been known to have two
- Middle tibiae only with short hair beneath at base
Empis nigripes Fab
Empis bicuspidata(N) Collin keys out here and can only be separated on the basis of having pale hairs on the metapleura and a rather more dense arrangement of flattened hairs above hind tibiae.
- 8 Hind tibiae pennate for whole length below
 Thorax black
 Basal joint of front tarsi pennate above
 All legs strongly pennate
 Dark wings Empis pennipes Linnaeus
 This species is included here because it has been known to have only two scuteller bristles
- Hind tibiae pennate for less than whole length below 9
- 9 Hind tarsi with spines beneath especially basal segments
 Black abdominal pubescence
Empis woodi Collin (R3)
- Hind tarsi without spines beneath
 Pale abdominal pubescence
- Empis planetica Collin (N)

KEY TO FEMALE EMPIS WITH DARK COLOURED HALTERES

- 1 Two scuteller bristles 2
 - Four scuteller bristles 5
- 2 Anal vein reaching wing margin 4
 - Anal vein not reaching wing margin 3
- 3 Legs pennate
Empis aestiva Loew
- Legs not pennate
Empis praevia Collin
 the middle and hind femora bearing a fringe above of only short slightly flattened hairs
- 4 Hind femora not pennate or fringed below (R3)
Empis prodromus Loew
- Only hind femora above and beneath with short fringe
Empis chioptera Meigen
- 5 Anal vein complete
 Hind femora shortly pennate above and beneath
 Black metapleural fan
 Black haired abdomen
Empis caudatula Loew



Hind femur of caudatula