



BULLETIN OF THE **Dipterists** FORUM

Affiliated to the British Entomological and Natural History Society

NO 40

AUGUST 1995

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DIPTERIST'S ANNUAL MEETING, SATURDAY 11 NOVEMBER 1995
THE NATURAL HISTORY MUSEUM, LONDON.

Programme

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|-------|---|--|
| 11.00 | Liz Howe | Rare flies of Anglesey |
| 11.30 | Dave Clements | British and European conopids |
| 12.00 | Patrick Roper | Enjoying non-biting midges |
| 12.30 | Stuart Ball | The hoverfly recording scheme: what can we do with all the data? |
| 1.00 | Lunch - Bring your own or forage in local pubs and restaurants. | |
| 2.00 | Informal exhibits session. | |
| 2.30 | Annual General Meeting of the Dipterists' Forum. | |
| 3.30 | Identification of Sciomyzidae made easy; Ian McLean. | |
| 5.30 | End of afternoon sessions. The museum closes at 6.00. | |
| 6.30 | Dipterist's Supper | |

Résumé

Liz (DF membership secretary) and Mike Howe have been collecting assiduously for several years. This talk will reveal the delights they have found close to their home, such as *Stratiomys chamaeleon*, *Acrometopia wahlbergi* and *Eumerus sabulonum*, and give some details of their habitats. At the identification workshop held at Preston Montford last March, Dave Clements gave an excellent talk on the British conopid fauna, so we asked him to repeat his talk here. As well as discussing the British species for which Dave is the national scheme organiser, he will introduce some continental species. Patrick Roper set up the Chironomid Study Group two years ago and has had an encouraging response from members. Patrick will introduce this diverse and fascinating family, and show how you can make original contributions to their study. Stuart Ball is co-organiser of the Hoverfly Recording Scheme, together with Roger Morris. The full subtitle title to his talk is "you have contributed all this lovely data, but what can we do with it?" Stuart is well known for his interest in playing with data sets, and his talk should inspire other scheme organisers to delve further into the records submitted to them.

Procedure for the day

The annual meeting will be held at the Natural History Museum, Cromwell Road, South Kensington. As last year, we are using the Palaeontology Room for the whole day. Although we realise that this is not satisfactory, the Flett Theatre is not available this year because it is engulfed in re-furbishment of the Geology section. The cost will be £3.00 which you will pay as you enter the Palaeontology Room. Please show the receptionists this Bulletin as proof that you are attending Dipterists Day otherwise they will charge you the full entry fee to the museum.

Do please bring your exhibits for the afternoon. Microscopes are available so you can get someone knowledgeable to identify awkward specimens. The museum bookshop kindly offers a 10% discount to us. Show your

dipterological credentials to be eligible.

Parking is not available in the museum grounds but you can park in Imperial Institute Road (west off Museum Road) and in Imperial College car park (between Queen's Gate and Museum Road). It is not cheap but you won't have to keep running to a meter every two hours.

ANNUAL GENERAL MEETING

Notice is hereby given that the Annual General Meeting of the Dipterists Forum will be held at 2.30 pm on Saturday 11 November 1995 at the Natural History Museum, London.

Agenda

Secretary's report

Treasurer's report

Membership secretary's report

Confirmation of Constitution

Election of officers. The following people have agreed to stand for these posts.

Chairman	Roy Crossley
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Secretary	Alan Stubbs
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Treasurer	Jon Cole
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Membership secretary	Liz Howe
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Meetings secretary (indoor)	VACANT
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Meetings secretary (field)	VACANT
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Bulletin Editor	Martin Drake
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Publicity officer	Patrick Roper
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Ordinary members	Stuart Ball
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	Steve Falk
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	Roger Morris
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	Brian Pitkin
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	Chris Spilling
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Unelected members:

BENHS representative	Peter Chandler
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Dipterists Digest Editor	Graham Rotheray
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Under Draft Constitution 7 (f), all officers (Chairman, Treasurer, Secretary) and those with elected responsibilities (Membership Secretary, Bulletin Editor and Publicity Officer) are open to annual election or re-election. Ordinary Members are elected initially for three years.

DIPTERISTS SUPPER, SATURDAY 11 NOVEMBER 1995

The Supper is one of the Dipterist's highlights of the year. What better way to end Dipterist's Day than to relax in the splendid setting of the **Rooms of the Royal Entomological Society**, with the excellent meal that David and Diane prepare!

The Royal Entomological Society is at 41 Queen's Gate (running along the west side of the museum) and will be open from 6.00 when the museum closes. The dinner is at 6.30 for a 7.00 start. Please note that, for security reason, the front door may be locked from 7.00 - and nobody may hear your screams over the sounds of eating. The cost is £13.50; please make cheques payable to David Henshaw and enclose a s.a.e. if you do not want David to hold your ticket.

David Henshaw, 34 Rounton Road, Waltham Abbey, Essex, EN9 3AR

DIPTERISTS FORUM - THE FIRST YEAR

A tremendous amount of hard work has been undertaken during the past year by the Committee, and in particular by the small core who make up the Executive Committee. Much work has gone into the wording of the Constitution and other aspects of the start-up administration which has been so essential in order to establish a sound organisation.

Support for the Forum and Dipterist Digest has been most encouraging and we have ambitious plans for future growth. But above all we need to know what members want of the Forum so suggestions and ideas will be very welcome; if you are able to put these to Alan Stubbs or myself in advance of Dipterists Day, so much the better. If not, then let us know on the day itself.

Roy Crossley, Chairman

MEMBERSHIP MATTERS

Subscriptions. I know that many of you have only just paid for 1995 but, as our year runs from January to December, your 1996 subscription will be due in January next year. If you attend Dipterists Day, we will happily take your subscription then. We will send an invoice in December to those who do not attend and a final reminder in the March bulletin. Anyone who did not receive a copy of Bulletin No. 39, March 1995, should contact me.

Membership at July this year was very encouraging and exceeds our expectation.. We have 216 Forum members, 189 subscribers to Dipterists Digest, and 164 who are both members and subscribers. An address lists accompanies this Bulletin.

Liz Howe, Membership Secretary (address at end of Bulletin)

LLANDEILO, CARMARTHENSHIRE 11-15 OCTOBER 1995

The main autumn field meeting will be based on Llandeilo. Craneflies and fungus gnats are our main targets for recording but a fair range of other flies can usually be found.

This meeting adds to the autumn coverage of field meetings in Wales. For instance we have previously used Monmouth, the east end of the Brecon Beacons and Newbridge-on-Wye as centres. We have had a summer meeting at Carmarthen, so some of the sites will be familiar ones but there are some very promising 'new' sites to explore. Llandeilo is a good strategic base giving access to a wide range of habitats from base rich seepages on the flanks of the Brecon Beacons to lowland rivers with shingle banks, from parkland with ancient trees to valley woodland, and from marshes to sand dunes.

Ian Morgan will be looking after the local logistics. He will arrange for the party to be in a local guest house (or equivalent) so if you wish to be part of the main booking please let Ian know as soon as possible (Countryside Council for Wales, Yr Hen Bost, 54 Rhos Maen Street, Llandeilo, Dyfed: tel. 0558 822111). Late comers will have to be content with an alternative list of accommodation. The idea is to assemble at Llandeilo on the evening of Wednesday 11 October and to finish in the field during the afternoon of Sunday 15 October, but please still come even if you can only manage a couple of days.

Alan Stubbs and Peter Chandler will be encouraging you to collect craneflies and fungus gnats. Keith Alexander has already booked and we hope more people will join in. This is a good occasion to learn something about Nematocera, but even if you do not want to identify them, you can help us gather samples and get some fresh air in this traditional end of field season social.

Alan Stubbs

INDOOR MEETINGS

AES Annual Exhibition, Saturday 7 October, 1995, Kempton Park Racecourse.

BENHS Annual Exhibition, Saturday 28 October 1995, Imperial College, London

Cranefly Workshop, Saturday 25 November 1995 (led by Alan Stubbs)

A BENHS Workshop at Dinton Pastures, Reading. This is aimed at beginners. There will be an opportunity to see and use the BENHS collections. Contact Ian McLean (BENHS Indoor Meetings Secretary) if you would like to attend, on 01480 450554 (evenings).

Bluebottle and Fleshfly Workshop, Dinton Pastures, Reading, Saturday 17 February 1996 (led by Steve Falk)

A BENHS Workshop at Dinton Pastures, as above.

Cranefly Workshop & Introduction to Flies, Preston Montford, March 1996

This course will include a master class on craneflies led by Alan Stubbs, and a beginner's introduction to flies led by Stuart Ball and Roger Morris. The course will be held at Preston Montford Field Centre, Shropshire **8-10 March or 15-17 March 1996**, and the cost will be about £65 - 75. If you would like to attend, contact Roger Morris with a £30 deposit (made out to Roger), 3 Lindale Mount, Renthorpe, Wakefield, WF2 0BH.

Hoverfly workshop, Summer 1996

This course was advertised in the last Bulletin. It will run in July at Juniper Hall field centre, Surrey, if there is enough interest, but no firm details can be given yet. The course will be mainly for beginners but there will also be opportunities for more advanced tuition. Contact Roger Morris if you are interested (3 Lindale Mount, Renthorpe, Wakefield, WF2 0BH).

SUMMER MEETING, YORK, 13-20 JULY 1996

Arrangements are now in hand for this meeting which will be based at Queen Margaret's School, Escrick Park, York, from Saturday 13 July to Saturday 20 July. Escrick is situated approximately 6 miles south of York on the A19, about 5 minutes drive from the A64 York by-pass.

Queen Margaret's School is a private girls school based on Escrick Hall, the former home of the Wenlock (now Forbes-Adams) family. Our living accommodation will be in the 24 single study bedrooms of the sixth-form house with a small overflow in an adjacent building if required. Sheets, pillow cases and duvets will be provided, but not towels. Meals will be taken in a private dining room for 24 people; bar facilities are available. If numbers exceed 24 then the school dining room will be used. Meal times are breakfast at 7.30 - 8.00 and a three-course evening meal at 6.30. Laboratory facilities are included in the price and there is ample parking.

The total cost for the week is £160 and the terms are as follows:

£10 non-returnable deposit to be paid by 20 January.

£80 to be paid by 13 May.

£70 to be paid on arrival.

Please make all booking arrangements - and direct enquiries - to Roy Crossley, 1 The Cloisters, Wilberfoss, York, YO4 5RF enclosing s.a.e. (phone 01759 388809). Cheques to be made payable to 'Roy Crossley re York'.

Anyone who wishes to attend, but for only part of the week is requested to make arrangements with someone else to take up the unused nights. A minimum of 20 people will be needed in order for the meeting to go ahead. At the time of writing, 18 have already expressed interest in attending.

There is an abundance of classic sites within easy reach of York; the 600+ acres of Skipwith Common SSSI are part of the Escrick Estate and are only five minutes away. The Lower Derwent Valley NNR is ten minutes distant, Askam Bog is about 15 minutes, and a little further are Strenshall Common and Bishop Wood. For those prepared to travel up to an hour, there are Thorne Moors NNR and, to the north, the North York Moors with such entomological hot-spots as Duncombe Park NNR, Forge Valley NNR, Ashberry and Rievaulx. A little further still are numerous coastal sites, and inland the SSSI woodlands of Lower Swaledale.

Although these are well known location, there is a paucity of recent records for many Diptera families, and there will be ample opportunity to make new discoveries. In addition, there are many sites which are still unknown territory as far as Diptera are concerned, so there will be plenty to keep everyone very busy!

Roy Crossley

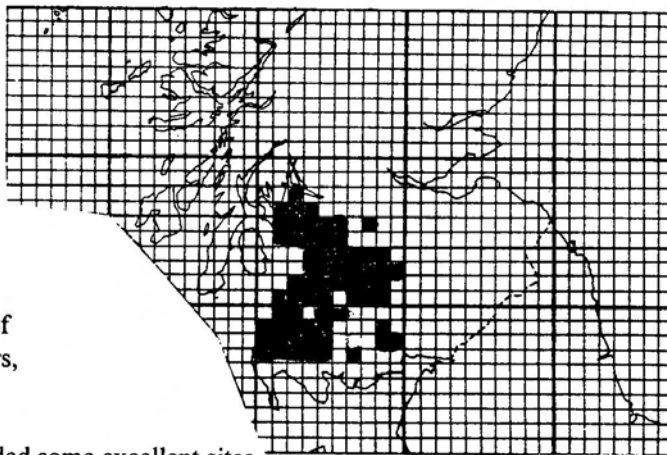
REPORT ON SUMMER FIELD MEETING AT AYR, JULY 1995.

The location was chosen since Ayrshire, and indeed most of SW Scotland was pretty well devoid of hoverfly records, as with other schemes. Long ago there had been a field meeting based at Newton Stewart, but poor weather had confined the effort largely to the south-facing Galloway coast. The Galashiels meeting had focused on the eastern part of the Southern Uplands and the Stirling meeting reached down to the Clyde Valley woodlands just south of Glasgow.

Well, we cannot be accused of lethargy. We got into over 60 10 km squares during the residential days and the tally including picking up squares to and from the meeting must come to over 70. The provisional and incomplete coverage map shows what can be done on a nominal 6 day field meeting, one day of which was wet. The party size and composition varied daily but was generally just over 20 dipterists plus an aculeate hymenopterist and someone who largely concentrated on Heteroptera. The accommodation and the large lab at the agricultural college at Auchincruive worked out well. This year we did not have onboard computing but Liz and Mike Howe have volunteered to put all data onto Recorder. In the whirl of activity and plethora of material it is only possible at present to give a hazy recall of some of the highlights.

Sand dunes were a bit restricted because of golf courses but some sand pits became the place everyone wanted to see following an amazing list of goodies such as the robberfly *Pamponerus germanicus*, the bee fly *Phthiria pulicaria* and the hoverflies *Chrysotoxum festivum* and *Eumerus sabulonum* (all but *Phthiria* are Scottish rarities). The aculeate hymenopterist built up quite a list here.

The coastal grasslands and cliffs had plenty of flowers. Bracken Bay had seepages and waterfall streams, with an interesting crane fly fauna. Culzean Castle, a Scottish National Trust site that allowed us in free, was the first of a series of sites to produce an undescribed doli, a *Campsicnemus*, previously known only from Northern Ireland. On a speculative double square bash near Hunterston Power station we found ourselves on a long stretch of coastal grassland which was incredibly full of flowers, and a fair list of hoverflies.



Rivers and streams, especially where wooded, provided some excellent sites.

The Ayr Gorge was particularly nice, and yielded the new *Campsicnemus* and the sciomyzid *Tetanura pallidiventris*. At our northernmost ravine we found the fourth British specimen of the rhagionid *Chrysopilus erythrophthalmus*, which was new to Scotland. There were some nice wetlands. *Parhelophilus consimilis* was found at two sites on the way to the meeting, and *Anasimyia contracta* had its Scottish records almost doubled. The crane fly *Dicranomyia distendens* was found at a super basin mire.

Woodlands in the Southern Uplands included vast conifer plantations but, when appropriate stopping points were chosen, good lists of hoverflies were made. Thus *Xylota coeruleiventris* was seen in good numbers in some places, and *Megasyrphus annulipes* was found here on the way to the meeting.

Although much of Scotland is sparse in base rich rocks, this part of the country has big tracts of base-rich sedimentary rocks, basalts and other such rocks. Some of the special flies of base-rich sites included the craneflies *Orimarga virgo* and an as yet undescribed *Dicranomyia*. The ultra basic serpentines are an even rarer rock type, at one site yielding specimens of the soldierfly *Oxycera pygmaea*. Other new regional records come to mind, such as *Oxycera dives* and *Platycheirus europaeus* to name but two.

Everyone would have chosen different selections for comment and there are plenty of interesting records. Although the season has been a sparse one for many groups of Diptera, the combined tally of hoverflies and many other groups will be an impressive one. All concerned should be well pleased that Ayrshire and its fringes in neighbouring counties will now appear conspicuously on the maps.

Our thanks go to Roger Morris for acting as administrative leader. What was so pleasing about running this meeting was the way that so many people took the initiative leading day trips into unworked areas, and this shows in the exceptional coverage achieved.

Alan Stubbs

NEWS FROM THE SCHEMES

Chironomid Study Group

Members continue to join the Chironomid Study Group and we now have over 29 enthusiasts drawn from dipterists proper and the palaeoecologists who use the remains of Chironomid larvae and pupae to determine things about the age and history of aquatic sediments.

Another newsletter is in preparation and, with luck and a following wind, should be distributed in late summer or early autumn. Anyone interested in joining the group should contact me at South View, Sedlescombe, Battle, East Sussex TN33 0PE Tel/fax 01424 870208, email archmain@pavilion.co.uk.

Patrick Roper

Conopid Recording Scheme

Newsletter No. 6 is issued with this Bulletin.

Cranefly Recording Scheme

It has been rather a flat season, not helped by yet another drought summer. It is worth reminding you that the autumn is a peak period for quite a number of species so don't fold up your net when hoverflies fade in September. If you are likely to come to the cranefly workshops then it helps greatly to have your own material to name.

This has very much been the year of the calcareous seepage and wet rock face fauna as regards opportunities to visit sites in SW Scotland and the Pennines. Species include *Orimarga virgo*, *O. juvenilis*, *Metalimonia occidua*, *Dicranomyia. aquosa*, *Dicranomyia* sp. nov., *Crunobia straminea*, *Molophilus bifidus*, *M. corniger* and *Molophilus variispinus*.

The *Brachylimnophila separata/nemoralis* complex is becoming a bit clearer, comprising at least 4 species. At Ayr there were a number of sites with a form of *nemoralis* that was typical of the Bideford (Devon) meeting, seemingly a distinct species of western districts. Another species is typical of fens and calcareous seepages and its range has been extended considerably north of its main southern distribution. *B. separata* is most typical of upland situations

though extending to lowland sites in some districts.

Alan Stubbs

Hoverfly Recording Scheme

Newsletter No 20 is issued with this Bulletin.

Larger Brachycera Recording Scheme

An unseasonal newsletter (No 13) is issued with this bulletin; one article related to Alan's discussion below on English names. We are still asking for a photograph for the frontice of the larger Brachycera book.

Alan Stubbs & Martin Drake

VIEWS NEEDED NOW - BIG REMINDER!

New British Check List. The March Bulletin outlined Peter Chandler's project for a new check list of British Diptera. There has been no response to the request for views on the arrangement of orders and families (alphabetic, "taxonomic"). **Peter would welcome your opinions. Could readers to whom Peter sent sections on their areas of expertise please reply if you have not done so.**

PUBLICATIONS

The Type-Material of Diptera (Insecta) described by G. H. Verrall and J. E. Collin, by Adrian C. Pont, Honorary Assistant Curator, Hope Entomological Collection, University Museum, Oxford, 1995.

- Details the single most important private collection of Diptera in Britain.
- Original 'type specimens' vital for taxonomic studies of flies.

Verrall and his nephew Collin dominated the study of British Diptera for a century, and formed what is probably the finest collection of Diptera ever to have been in private hands - it contains a more complete representation of British flies than does the Natural History Museum in London. The collection, now in the Oxford University Museum, is an entomological resource of international standing, as it contains the original material ('types') of the several hundred new species that Verrall and Collin described.

This book is a source-work of information on the Verrall-Collin Diptera. For the research worker, it is a catalogue of the 900 species described, with an enumeration of the type-specimens located in their collection and in many other museums in Britain, Europe and North America. For the historian, it contains essential historical, bibliographic and museological information on an important era in British entomology. Appendices include brief biographies of their collecting associates, a classified list of the new species they describe, and a list of the British localities where their new species were found.

Oxford University Museum Publication No 3. 232 pages, 8 plates, Clarendon Press, April 1995. 0-19-854919-9, hardback, £65.00.

Coulson, J., Braur, L., Butterfield, J., Downie, I., Cranna, I. Cranna, I. & Smith, C., 1995. The invertebrates of the northern Scottish flows, and a comparison with other peatland habitats. (pp. 74-94). In Thompson, D.A.B., Hester, A.J. & Usher, M.B. (Eds), 1995. Heaths and moorland: cultural landscapes. HMSO, 400pp.

There has been great anguish over the future of the flow country, mainly as a result major afforestation projects. Forestry is uneconomic without great subsidies from the tax payer, but at least the worst tax dodge investment ploys have been closed. It has always been an embarrassment that for the most part the insect fauna is unknown.

Now, however, there is a useful reference with a fair bit of information on the Diptera, within a book that contains much other perspective besides. The insects of the Flows lack a marked spring emergence period which is instead longer than that of blanket bog; the biomass is lower.

NATURA 2000 SITES

On March 31st DoE quietly published, long overdue, *A list of possible Special Areas of Conservation in the UK*. Apart from Butterfly Conservation, which was sent a copy, the entomological world was left in the dark. I suspect I was one of the few entomologists in a position to tweek out the necessary papers in order to comment within the 6 week deadline. By mid June the list had to be at Brussels so this was not consultation, it was 'consultation'. Agency staff incidentally had been under pain of death not to hint at any of the sites in advance, even where these were NNRs owned by the agencies.

The list is like gold dust but fortunately it has now been published in *British Wildlife*, 6 (5), 286-296, June 1995; there are accompanying articles that give further perspective. Many of the 280 listed names are difficult to interpret, for instance which sites are embraced in Norfolk Valley Fens? This where the consultation period is easily eaten up, but, yes, the main Norfolk pingo sites are included.

The selection is biased since the habitats had to be those recognised in the European Habitats Directive, which in turn was based on the CORINE vegetation classification devised for a completely different purpose and itself biased to certain regions of Europe.

Whilst the agencies have made a commendable effort to squeeze a quart into a pint bottle (since a ceiling of 300 sites was set by DoE), there are important omissions. I will mention a few within quite a long submission that I made.

- The North York Moors calcareous springs and seepages (a priority European Habitat)
- The Hampshire chalk stream valley fens (CORINE problem).
- Serious omissions on the coast, including the Isle of Wight, Yorkshire and south Devon.
- Syon Park, tidal flood meadow and carr on the River Thames (surely a rare habitat in Europe these days)
- Redefinition of Thursley to embrace a much wider ecological representation as Surrey Sands (CORINE may not allow this).
- Levels habitat needs to be included (not a CORINE habitat)
- Pembrokeshire/Dyfed wetlands need greater ecological representation as a suite (CORINE problem).
- River selection, yet to be published but known options seem to be based on aquatic plants and a few animal species, needs to include the Monnow and the Spey.

You may yawn at yet another paper conservation exercise. However, the stakes may be high since this is an EC initiative aimed at meeting the commitments made by many nations world wide at the Rio Conference. Brussels will, hopefully, insist on a much stronger commitment than we have been used to on SSSIs in general. In particular, rather than just prevent 'damaging operations' whilst a site declines in value through lack of management, there will be the active commitment to maintaining biodiversity on these sites.

The big risk of course is that a two tier SSSI system will have been created and at public inquiries etc there will be plenty of focus on the fact that not all SSSIs are equal. Whilst there may be a realism in focusing scarce public resources on maintaining biodiversity on sites of international value, we cannot allow sites of 'only' national importance to be lost or decline.

It is very important that outside pressure is maintained so that government cannot be let off the hook by doing the bare minimum whitewash. The agencies themselves need the support of outside pressure on government thinking.

- We have yet to see this number of proposals confirmed by Brussels.
- We have yet to hear whether there will be a *de facto* equal treatment of important habitats/sites which do not currently qualify under the inadequate CORINE basis of the European Habitats Directive.
- We have yet to hear how the agencies propose to respond to sites which they say do not qualify because they

are not SSSIs. A flimsy let out (imposed by DoE?).

- We have yet to see the *real politic* over the commitment in resources, safeguard and prevention of decline to SACs and the implications for other SSSIs

What should entomologists be doing?

- Keep the Invertebrate Site Register (run at JNCC) up-to-date with important information since this is the basis of so many decisions within the agencies. If you have direct contact via one of the agency entomologists that is an alternative route.
- Feed in views on sites which should be considered as SACs, or as indeed SSSIs.
- Take part in, or feed into, the various county Biodiversity Challenge fora that are addressing targets for conservation. Your county naturalists trust should know where things stand.
- No panic yet, but be prepared to write to MPs and MEPs if their commitment is looking inadequate.

Alan Stubbs

CALCAREOUS SPRINGS AND SEEPAGES

Some of us have been targeting calcareous springs and seepages for some while. The fauna seems poorly known, in part because the existence of sites is poorly known. The range of ecological variables is large and the Diptera are seemingly by far the best group of insects for site evaluation. Craneflies, soldierflies, dolis and snail-killing flies are among the useful groups, moreover ones having recording schemes that give the national background picture. Roy Crossley has been carrying out a survey at Forge Valley NNR this year. Already he has an impressive list of dolis and empids so the final seasons tally should prove a very important base-line for the fauna in a woodland setting.

The proposed SAC list includes some clusters of sites for 'Petrifying springs with tufa formations (Cratoneurion)', including some in the Pennines that I had long been intending to visit. Now was clearly the time to do so, on passage to and from Ayr, in view of my North York Moors proposal. There must be a huge number of calcareous seepages, plus springs, in the Pennines and the types range from those that meet the SAC definition to those that do not. I had the advantage of being told where the best sites are situated, with exact position of seepages etc. Still, one of the most outstanding sites had only just been located by phase 1 botanical survey and some of the sites on open moorland would be difficult to anticipate from ordnance maps.

On or off these sites, I found the stratiomyid *Oxycera dives* at four sites (I think that about doubles the English records, bringing the known Pennine distribution down to the heart of the Yorkshire Dales National Park). *Oxycera pygmaea* is plentiful on certain types of sites, as is the sciomyzid *Dictya umbrarum*. At about 800ft beside a tarn in the north Pennines I found *Stratiomys potamida* (so why are there no Scottish lowland records?), and *Oplodontha viridula* at an even higher site. Craneflies included *Orimargo juvenilis* at moorland lime mud seepages and *O. virgo* at wooded sites. *Trichopsomyia flavitarsis* and *Eristalis rupium* were among the hoverflies of particular types of site.

My main purpose at present is simply to say I would like to hear from anyone who has been quietly building up information on this sort of habitat within GB. Since the fly fauna is so useful for site evaluation it would be useful to move towards some sort of synthesis of what is known about these faunas.

Alan Stubbs

AMBER BEES IN WRONG ORDER

In the *Independent* Newspaper of Friday 19th May 1995, two articles by their science correspondent Steve Connor appeared. On the front page was a short article entitled "*Amber Bee eclipses Jurassic Park fiction*", including a large colour photograph of the insect concerned. On page 3, a longer account was entitled "*Bee's sticky end gives*

insight into the past" in which a smaller version of the same photograph was included in a chart showing the position of the bee in the evolution chain as being some time after the first monkeys.

The stingless bee was stated to have been from Dominican amber, variously stated as being 25 or 40 million years old. Its photograph and others of insects plus a scorpion and lizard in amber were shown on all television news bulletins on the same day. The photograph was good enough to indicate that the ancient insect was actually a fungus gnat of the family Keroplatidae, perhaps a less popular identity!

The subject of the article was the alleged revival of bacteria from spores found in the intestine of insects preserved in amber. Up to 1500 species of micro-organisms, including both bacteria and fungi, have been revived from spores isolated from insects preserved in amber of ages from 2 to 130 million years. These living fossils are being grown under top security at a Californian University and being investigated for new drugs by a company called Amgergene. The bee was stated to have been the first insect from which such a resurrection had been confirmed. The bacteria isolated from it were said to be of a type aiding the digestion of the insect and similar but not identical to bacteria fulfilling a similar role in living bees.

Contact was made with Steve Connor to point out the discrepancy between the text and photograph. He responded that the error happened because they had received only unclear faxes of an article in *Science* in which the research referring to the bee was originally published, and when they received the photograph of the fungus gnat as an example of the insects used in the research, jumped to the conclusion that it was the bee. The error was discovered when the correct photograph arrived from the USA on the day of publication. He added that "at the end of the day" he did not think it "detracted from the essence of the news story". As far as I know no correction was ever published or broadcast.

Peter Chandler

THE LLANFAIRPWLLGWYNGYLL SYNDROME

OK, I cannot pronounce it either. It's a renowned place-name from Anglesey with an impossible pronunciation. There are some Welsh dipterists who can whirl off the name with aplomb, but I am utterly perplexed in repeating what they said. It would be bad enough to try to remember the meaningless spelling, meaningless, that is, unless you recognise the meaning of the composite word in Welsh. To many people, the scientific names of flies are equally gobbledegook, being unpronounceable and lacking in meaning. Most people find scientific names intimidating at best, or quite likely a non-starter.

By now you will have detected a build-up to my hobby-horse about the value of English names for flies. If we are not to remain a small clique, but to promote the study of Diptera to a much wider audience of naturalists, I believe we have to be more outward-looking on this question of names.

There are probably three groups of potential dipterists in this context:

- 1 Those who are already used to scientific names in other taxonomic groups. Thereby they are comfortable with yet more names, or at least can cope.
- 2 Those who discover an interest in flies and will persevere despite the horror of having to cope with scientific names.
- 3 Those who glimpse that flies might be interesting but find the lack of English names a total turn-off.

I have the suspicion that we are unnecessarily losing the majority, the category 3 people.

The great expansion of popularity of natural history has been driven by the catalyst of well illustrated books with English names, and the parallel concern for the conservation of plants and animals that have become familiar. Where would birds, flowering plants, butterflies and dragonflies stand if reference works had only scientific names?

I am convinced that only a small fraction of people would be so enthusiastic. The modern trend has been for people to want to expand into insect groups, but there are very few day-time insects with English names. Either we remain elitist by adhering to scientific names or we open up the subject by meeting people where they are at.

For *British Hoverflies*, and the forthcoming book on larger Brachycera, the hard core of keen recorders at small meetings have produced a chorus of derision at the idea of English names. But that is only a small sample of people with an active interest in Diptera. And, I would remind you, that with about 2,500 copies of *British Hoverflies* in circulation, only 149 people are Dipterists Forum members registered with the scheme. My contention is that most people with the book, who have been used to English names in other branches of natural history, find the scientific names intimidating.

Arguments in favour of English names:

- 1 They are acceptable to a very much greater audience and hence open up and promote the study of Diptera.
- 2 They are easier to remember and pronounce.
- 3 If well chosen, they are meaningful and helpful (much more so than the binomial even if you know its translation).
- 4 Elitism in use of scientific names is a self-inflicted barrier.
- 5 English names will be stable compared with the vagaries of changes in binomials. At least British dipterists will be in total control over English names!
- 6 The names can represent easier grouping of look-alike species, especially when a plethora of generic names is difficult to remember (eg the recent split of therevids into numerous genera).
- 7 They are far more user-friendly for the irregular user of the book who is not going to become familiar with scientific names. Today's irregular user may become tomorrow's regular recorder if the names are digestible.
- 8 No-one is forcing you to use English names, but equally others don't want scientific names forced on them for the sake of 'scientific' purity.

Arguments against using English names:

- 1 It is an unnecessary confusion.
- 2 Records are more likely to be ambiguous and lack rigour.
- 3 It isn't good practice for serious entomologists.
- 4 They do not ease identification.
- 5 Generic associations may be lost.
- 6 Another set of names have to be remembered.
- 7 All species would need English names if a hybrid system is to be avoided, and that may be tortuous within large, look-alike species complexes.

As one who has used English names for macro-moths for about 50 years, I disagree with arguments 1-4 against using English names. 5 depends on the names, but starting from scratch makes it easier to arrive at a logical system. With 6 and 7, it is largely a personal choice which system suites you best.

In the forthcoming larger Brachycera book, it would be too cumbersome at every mention to use both sets of names, so the scientific ones will be in general usage in the text and keys. The main text to each species, and also the plate captions, would use both names. It is then up to the users to annotate the book more widely with English names.

Having given much thought to this matter, I am becoming more convinced that English names are required in order to overcome the mysticism that otherwise envelops our subject. No final decision has been taken for the book but now is the time to give you the chance of a considered response. All I ask is that you think through what is in the best interest of promoting the study of Diptera by helping far more people to contribute and enjoy them. There are implications for the future revision of *British Hoverflies* and potentially for other popular groups of flies for which the task of providing English names may be more difficult. This is a crucial decision in which I ask you all to take part.

Look down the list given in the Larger Brachycera newsletter. I have the expectation that you will have learnt more

from the English names than from the scientific name. Does not a Kite-tailed Robberfly catch the imagination in a way that the apparently featureless *Machimus atricapillus* will never do?

Alan Stubbs

AND NOW..... THE CENTRE OF HUMBLENESS

Did you know - *hushed tones* - they don't really know what flies live in the Centre of the Universe? Not many of us would dare to think such a thing, let alone blurt it out.

After all we heard over the years about Otley, and then that most remarkable cosmological event, defying all known Laws of Nature, when Wilberfoss became that very Centre, we had all taken it for granted that the whole of Creation had been documented for light years around by generations of Yorkshire entomologists. But the truth is out. All the hype had been largely about a relatively few historical half-worked sites and a recent blitz within the territory of the Greater Peoples Republic of Sheffield and Rotherham. Vast tracts of Yorkshire are virtually virgin territory for recording.

So we have actually been granted a visa by the Forum Chairman to hold a field meeting in the Centre of the Universe. Expressions of surprise that help from outsiders should be sought were devastatingly countered by "we're not too proud in Yorkshire" (but with a Yorkshire accent). Such humility. Mind, these Yorkshire folk are proud about their sites. The least we can do is give them a hand.

Alan Stubbs

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I thought it would be appropriate to commemorate the publication of the twentieth issue of the Hoverfly Newsletter by inviting the two previous editors to contribute articles. I therefore thank Philip Entwistle, who started the newsletter off, and, I recall, wrote most of the early issues single-handed, and Graham Rotheray, who edited issues 5 to 15. My thanks also to everyone else who has submitted articles.

This newsletter is also the first in the hoverfly series to be issued under the auspices of the Dipterists Forum. Recorders who are not members of the forum should, as in the past, have received their copies from the Biological Records Centre (BRC). However recorders who are not in the Dipterists Forum and do not intend to join it are warned that BRC may not circulate more than one newsletter per scheme per year; since there is nearly always sufficient material to justify the issue of two Hoverfly Newsletters per year, there is therefore a danger that non forum members may not receive the odd-numbered issues. I am attempting to resolve this problem, but should I fail, I would be willing to supply copies of those newsletters to any non forum members who request such a service in exchange for the cost of photocopying and postage. Those who wish to join the Dipterists Forum should contact **Liz Howe, Ger-y-Parc, Marianglas, Tynyngogl, Benllech, Gwynedd, LL74 8NS.**

In the following pages a number of further changes to the nomenclature of hoverfly species and genera are introduced. I am aware that the recent plethora of name changes has not been universally welcomed, though few, I believe, would dispute the logic of the generic name changes, e.g. the splitting of *Chrysogaster* into two genera or the separation of *Ripponensia* (with its significantly different wing venation) from *Orthonevra*. The basis for one specific name change is however challenged in this newsletter. In this period of change I have not attempted to update the scientific names in articles offered for inclusion in the newsletter provided they conform to the names in Stubbs and Falk, which is no doubt the source used by most recorders.

Beginning with this issue, publication dates for the newsletter will be August and February. Copy for newsletter No. 21 should be sent to me, **David Iloff, Green Willows, Station Road, Woodmancote, Cheltenham, Glos, GL52 4HN**, to reach me by 1 December 1995.

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HOVERFLIES NORTH OF INVERNESS

Philip F Entwistle

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The Highland Region of Scotland, an area which can be roughly defined as lying north of a line from Elgin, running south-west down the Great Glen to the Sound of Mull, has been, and still is for that matter, notably short of resident entomologists. Most of the exploration of its insects has relied on periodic visits in holiday seasons. Verrall must have been the first of such short term visitors concerned especially with the Diptera, whilst the renowned and shadowy Colonel Yerbury (1912-1913) stayed rather longer and worked an area roughly extending from Golspie on the east coast to Lochinver on the west. The rest is bits and pieces, the expansion of studies roughly concurrent with the advent of the Diptera recording schemes. Kenn Watt at Aberdeen has provided a great service in collating all the Scottish hoverfly records; hence, in this brief note I will comment mainly on features I have personally encountered.

Since about 1982 I have been lucky enough to spend quite long periods of the year in the far north and have largely worked in areas beyond Inverness. But despite collecting for over a decade I am sure I have far from exhausted questions of the specific constitution of the hoverfly population or its distribution. And as for biology and phenology.....! For instance during the last two years *Arctophila fulva* has been added to my list, my most recent sighting being on *Succisa pratensis* flowers on 22 October 1994. Almost as recently I have taken *Scaeva selenitica* in mid August feeding with *Metasyrphus nielsenii* on composite weeds in a garden lawn - there is an area of Scots pine (*Pinus sylvestris*) not far away; these three in Sutherland just north of

Dornoch Firth. Another recent addition was *Portevinia maculata*, on ramsons, of course, in a little wood near Dingwall (22 May 1994), thus, as far as I can tell, extending its known range another 80 miles north (Entwistle, 1986). Ramsons are not uncommon in the Highland Region, extending right up to the north coast, so we may anticipate further discoveries of this species. Perhaps the most instructive range extension is that of *Callicera rufa*: by searching out potential breeding sites in *Pinus sylvestris* Graham Rotheray and Iain MacGowan (1990) showed this species to be omnipresent in the Caledonian pine forest relict areas of Scotland: for the first time they found it to be well established into the Highland Region. More notable even than these records of the ranges of known species is the recent discovery by Alan Stubbs of *Sphegina sibirica*, new to the British Isles, at Dornie, within the Highland Region but well south of Inverness opposite Skye (Stubbs, 1994). We shall now be vigilant in looking for this species north of Inverness, as indeed we are for the elusive *Chamaesyphus caledonicus*, known definitely only from Culbin Sands just outside our area. The fickleness of the early season up here is notorious and one wonders how some species survive. But survive they do. Amongst them are *Melangyna barbifrons* and *Melangyna quadrimaculata*, both on *Salix* catkins in April. At the time of writing, 25 April 1995, the catkins are well out, but because of continuously poor weather I have not so far seen a single hoverfly on them!

A notable and controlling aspect of plant ecology up here is the dominance of huge areas of moors, botanically debased by grazing and routine burning. Essentially it is only on the west and east coasts that richer habitats with well developed deciduous woodland are at all common, and even here, alas, the hardwoods have been heavily commercially exploited. The climate, soils, topography and botany of the east and west coastal area are markedly different and with this differences in the hoverfly fauna have yet to be correlated. The west will be productive, but, I think, the east more so. The huge discouraging centre, however, is not to be totally disparaged. In the ditches and low-lying parts lurk such species as *Anasymia lineata* and *Chrysotoxum arcuatum*, whilst *Eristalis rupium* could be expected on lush patches. Up in the actual mountains, as Graham Rotheray and David Horsfield (1995) recently remarked, the insect fauna remains largely unexplored and so presents a considerable and attractive challenge. We may anticipate *Platycheirus melanopsis*, found by Yerbury at Loch Assynt, Sutherland, to be not infrequent, while *Melanostoma dubium*, which Rotheray and Horsfield now suggest to be a montane and probably temperature-controlled morph of *Melanostoma mellinum*, should receive further study.

In common with areas further south, much coniferous softwood has been planted, especially in the post-war years, in the Highlands. Because it has been perceived as especially tolerant of deep undrained peat areas, much of this has been lodgepole pine, *Pinus contorta*. The impact of this process on highland entomology has still to be assessed, but it must be considerable. The new forests are not to be thought of simply as sterile expanses of coniferous monoculture: they enclose unplanted rocky, boggy and riverine areas in which, because to a large extent the tall forest fences exclude deer and sheep and so diminish grazing pressure, there is considerable herbaceous and woody regeneration. Such lacunae or refugia, protected by the shelter of tall conifers, would otherwise not exist! Their proper exploration could well provide a guide

to the possibilities of more planned and less accidental assays into conservation and biological diversification. Perhaps because of such extensive afforestation there have been both northward and southward flows of insects. For instance, the very flashy *Eriozona syrphoides*, an immigrant species to the British Isles now to be found north of Lairg, Sutherland (Entwistle, 1995), has probably hopscotched (no pun intended) from Continental Europe to hyperborea across a checkerboard of coniferous forests, probably mainly spruce (*Picea* spp.). A reverse flow is fairly well documented for *Xylota coeruleiventris* which has spread at least as far south as the Severn Estuary (Stubbs, 1983; Entwistle and Stubbs 1983). Martin Speight (1977) recognised *Metasyrphus nielsenii* for the first time in the British Isles, observed its association with Scots pine in the Grampian area and speculated on a possible growth of its range through plantings of other pine species: Alan Stubbs (1983) noted a single record from a wood in Oxfordshire (deciduous but with a small area of introduced pines) and suggested such an extension may be taking place. Meanwhile there is little doubt that in the Highlands new coniferous plantings have extended the habitat of some otherwise very localised species. *Chamaesyrrhus scaevoides*, a notable *Pinus sylvestris*-associated species, but which I took in a lodgepole pine plantation at Achfary at the head of Loch More in Sutherland (its northernmost known sighting) is probably a case in point, whilst *Didea intermedia* and *Epistrophe grossulariae* seem also to enjoy this habitat. We must hope to see *Blera fallax*, possibly where trees are being felled, in these man-made forests and outside its known Spey Valley domicile. On the other hand, it seems unlikely that *Callicera rufa* will be supported by the new forests: the trees are too clean grown and possibly felled too early to provide the necessary breeding sites of rot holes at branch junctions and so on. But could we encourage Forest Enterprise to leave us some stands of lodgepole pine to grow to maturity and senescence to see what eventually happens? Or could we even create artificial rot holes as Iain MacGowan did successfully for Scots pine? His recent observation (MacGowan, 1994) that *C. rufa* will also breed successfully in larch (*Larix decidua*) encourages this idea.

As recently defined by the Malloch Society study, the status of aspen in Scotland is decidedly insecure (MacGowan, 1993). And yet at least one very rare hoverfly, *Hammerschmidtia ferruginea*, may be totally dependent on this tree. Until recently this fly was thought to be restricted to the Spey Valley, but a few years ago I found it visiting a bird cherry (*Prunus padus*) in one of the few notable aspen areas in Sutherland. Subsequently Graham Rotheray found its larval stage under aspen bark not far away. Incidentally in this same lush valley I took *Brachyopa insensilis*, *Brachyopa pilosa*, and *Chalcosyrphus nemorum*. Thinking of xylophagous species we also have *Criorhina ranunculi*, which Verrall described as "perhaps the grandest of all our British Syrphidae", at least as far north as Alness, eastern Ross-shire (Entwistle, 1980); if you are here in late spring and early summer, try the flowers of gean (*Prunus avium*) and be prepared to strike very fast!

The identity of at least one species remains unresolved. *Dasysyrphus venustus* of the form *hilaris* (complying with Verrall's 1901 description) was collected near Lairg, Sutherland in May 1980. Male genitalia were distinct from *D. venustus sensu stricto* and it may be that this is a true British record of *D. hilaris*, but further material for study seems desirable (Entwistle, 1982).

Visitors who experience very wet weather - not unheard of up here - might console themselves by looking in the totally enclosed globeflower (*Trollius europaeus*). Try this in the pouring rain and even in the middle of the night and you are likely to find lots of *Cheilosia antiqua*! Rather few insects have discovered the trick of squeezing between the petal-like sepals of this plant, and that select community which has done so makes an interesting study for excessively fluvial periods (Entwistle, in press).

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WHAT FOOD FOR *MELANOSTOMA* LARVAE?

Graham E Rotheray

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Asked to name the most common hoverflies, many enthusiasts would usually include *Melanostoma* species. The experience of most collectors and field workers is that they are particularly abundant in Britain, and the same is probably true over much of the northern hemisphere. In just about every habitat and season, wherever hoverflies occur, *Melanostoma* adults will be seen. However, when it comes to *Melanostoma* larvae, the opposite is the case: they are rarely seen. In fact, where they occur and what they feed on is a mystery. In my view *Melanostoma* larvae are one of the biggest unresolved mysteries in predatory hoverfly biology.

When tracking down larvae of particular hoverfly species, the first step often involves identifying sites where adults occur. However, because *Melanostoma* adults are everywhere, this approach doesn't help much. Their ubiquity makes lack of knowledge about larval feeding habits all the more frustrating. Our understanding of the prey of many predatory hoverflies has grown enormously in recent years, yet the prey of these common hoverflies remains in doubt. We assume they are predatory on the basis of mouthpart structure and the numerous observations in laboratories of *Melanostoma* larvae eating aphids.

The problem is that when aphid colonies are examined very few *Melanostoma* larvae are found. For example, only 6 *Melanostoma* larvae were found out of about 3500 larvae I collected in Wales from 25 different plant species in 1977-9. Where are they in the field and what do they feed on?

In fact, the mystery involves other hoverflies. Into the category of species with ubiquitous adults and lack of knowledge concerning larval prey fall species such as *Platycheirus clypeatus*, *P. albimanus* and *Pyrophaena* spp. The larvae of many of these species will readily eat aphids in the laboratory but are almost absent from aphid colonies in the field. What are they doing in nature?

Melanostoma larvae are highly distinctive, being bright pea-green in colour with a somewhat amorphous, white, fat body overlying the hind gut. These larvae lack the stripes and bars of other green predatory larvae (Rotheray, G E 1994: **A Colour Guide to Hoverfly Larvae. Dipterists Digest No. 9**). The most successful method for finding them is to wait until winter when they can be located in leaf litter. But of course by that time they have finished feeding.

The only aphid colonies where I have found larvae are *Brachycaudus* sp. on red campion (*Silene dioica*), *Brevicoryne brassicae* on cabbage (*Brassica oleraca*), and *Cavariella* sp. on hogweed (*Heracleum sphondylium*). Apart from these occasions, the only time I found actively feeding *Melanostoma* larvae was among wet leaf litter beneath sycamore trees in Wales where, I assumed, they were feeding on the many dead and dying sycamore aphids knocked off the trees by heavy rain. One spring in

Scotland I swept numerous *Platycheirus clypeatus* puparia from an isolated patch of long grass, the larvae having probably ascended from the ground.

Perhaps these larvae feed on root aphids. Perhaps they scavenge leaf litter. Perhaps someone with enough time and diligence to make the necessary investigations will be good enough to solve the puzzle.....

IDENTIFICATION PROBLEMS WITH MALE *MELANOSTOMA*

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Although a casual collector of hoverflies for many years, I only joined the recording scheme and began systematic collecting in the spring of 1994, and immediately came up against an unexpected problem. By early May I had collected *Melanostoma* from several sites and was surprised to find that all the females keyed to *scalare* and the males to *mellinum*, the latter having tergites 2 and 3 almost one and a half times as long as wide (**British Hoverflies**, p.47).

This was an unlikely situation, so I approached Roger Morris, who advised that the males too were likely to be *scalare*, and also drew a freehand sketch, from memory, of the body outline of the two species. The problem was solved on 11 May with the emergence of another species of *Melanostoma* with a shorter and broader abdomen, having tergite 2 quadrate and tergite 3 slightly transverse. The shapes of the abdomens corresponded closely to the freehand sketch. The additional characters given by Verrall (**British Flies**, Vol.8, Syrphidae etc., p.304), relating to the dusting of the face and the pubescence of the arista, confirmed that the first species was indeed *scalare* and the second *mellinum*.

I wondered how the misconception of the length to breadth ratio could have arisen. The segments are not of course perfectly rectangular, but measuring length and breadth at different positions hardly changed the ratios. For *scalare*, the ratio of the greatest length to narrowest breadth was never more than 1.6, far from twice as long as wide. There may also be an element of optical illusion; the elongate yellow spots give the impression of the abdominal segments being longer than they really are. However examination of old dry specimens showed that the tergites had rolled into an almost cylindrical shape, making the abdomen much narrower than in the fresh material previously examined. It is probable that Alan Stubbs bases the measurements and drawings in **British Hoverflies** on such old specimens. I will now make a mental adjustment to the key to *Melanostoma* males, which I hope allows for dry as well as fresh material; *scalare* has tergites 2 and 3 markedly elongate, at least one and a half times as long as wide, while *mellinum* has tergites 2 and 3 less than one and a half times as long as wide.

XYLOTA FLORUM IN CORNWALL

Leon Truscott
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Rod Belringer and I have recently been recording hoverflies in Cornwall as members of the Caradon Field and Natural History Club. Our records have been forwarded to the Cornwall Biological Records Unit.

Among the species found in 1994 was *Xylota florum*. This was a female found on the leaf of hogweed (*Heracleum sphondylium*) on 9 July 1994 at Lydcott Wood (SX303584) near Hessenford. This may be a new species for Cornwall. The specimen is held by Rod Belringer.

MERODON EQUESTRIS IN OCTOBER

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During a recent visit to the Isles of Scilly in October 1994, Leon Truscott and I found some very late examples of *Merodon*. We are familiar with *Merodon equestris* in East Cornwall during May and June, but to find them in October made us think about the possibility that they might be examples of another European *Merodon* species such as *M. clavipes*, but on closer examination we found them to be only very late *M. equestris*. We came across six in all, four on St. Martin's on the 9th, one on St. Mary's on the 14th and one on St. Agnes on the 19th. Of the six, five were of the variety *narcissi*, the remaining one being of the variety *equestris*.

The farmers on these islands are renowned for growing early daffodils which are picked for market from October onwards. Could this, combined with the well above average temperatures for autumn in the Scillies, have produced a second brood of *M. equestris*?

BEHAVIOUR IN FEMALES OF *CHRYSOTOXUM FESTIVUM* AND *XANTHOGRAMMA CITROFASCIATUM*

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The note by Alan Stubbs on the behaviour of a *Chrysotoxum bicinctum* female (**Hoverfly Newsletter No. 18**, July 1994) prompts me to report a similar observation involving a female *C. festivum* in my St. Albans garden on 22 August 1994. The female was seen flying low in rough grass that had been allowed to grow at the margin of a small pond dug two years previously. Landing on a patch of ground between bare tussocks, the fly spent several seconds walking around in a seemingly purposeful way (perhaps searching for ants?) before flying off.

This reminded me of an observation I had made in Barking, Essex, on 29 May 1986, involving a female *Xanthogramma citrofasciatum* and an ant mound in rank grass by a drainage ditch. If my notes and memory serve, the ant mound was between 15 and 20 cm in height and around 30 cm in diameter and had several grass stems emerging from it. The female flew slowly through the grass and landed on one of the emergent grass stems. It then proceeded slowly down the stem to the surface of the nest on which it walked (again in a purposeful way) for a few seconds before flying off.

Oviposition was not noted in either case.

***CHRYSOTOXUM FESTIVUM* AND *XANTHOGRAMMA CITROFASCIATUM*: NOMENCLATURE**

David Iloff

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Ian Wynne's article above comparing the behaviour of *Chrysotoxum festivum* and *Xanthogramma citrofasciatum* has prompted me to write about another feature which is common to these two colourful and superficially similar-looking species, namely the fact that for many years there has been considerable dispute over which of them is the hoverfly named *Musca festiva* by Linnaeus. The specific name for the *Chrysotoxum* is derived from *Musca festiva*, but Thompson, Vockeroth and Speight proposed in 1982 that *Xanthogramma citrofasciatum* should be named *X. festivum*, arguing that this species and not the *Chrysotoxum* was the true *Musca festiva* of Linnaeus.

Linnaeus' description of *Musca festiva* is however of a hoverfly with black antennae which are longer than the head; this description fits *Chrysotoxum* but not *Xanthogramma*, the antennae of which are short and bright yellow. The specific name

Xanthogramma citrofasciatum should therefore be retained. A more detailed article on this subject has been submitted to **Dipterists Digest**.

MORE NAME CHANGES IN BRITISH HOVERFLIES

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Two recent papers by Alain Maibach, Pierre Goedlin de Tiefnau and Martin Speight convincingly review some of the Chrysogastrine hoverflies at the generic level. This has given us some name changes in the British species and as these do not seem to have percolated down to everyone yet I thought readers of the newsletters may be interested to learn what has been decreed! The changes affecting recorded British species are as follows: *Chrysogaster hirtella* and *C. Macquarti* are moved to the genus *Melanogaster*. The correct name for *C. Macquarti* is *M. aerosa*; the correct name for *Lejogaster splendida* is *L. tarsata*; *Orthonevra splendens* is moved to a new genus called *Riponnensia*.

To clear the confusion, I have set out the relevant portions of the revised checklist as follows:

CHRYSOGASTRINI

CHRYSOGASTER Meigen, 1803

cemiteriorum (Linnaeus, 1758)

= *chalybeata* Meigen, 1822

solstitialis (Fallen, 1817)

virescens Loew, 1854

MELANOGASTER

hirtella (Loew, 1843)

aerosa (Loew, 1843)

= *macquarti* Loew, 1843

LEJOGASTER Rondani, 1857

metallina (Fabricius, 1777)

tarsata (Megerle, in Meigen, 1822)

= *splendida* (Meigen, 1822)

ORTHONEVRA Macquart, 1829

brevicornis Loew, 1843

geniculata Meigen, 1830

nobilis (Fallen, 1817)

RIPONNENSIA Maibach, Goedlin de Tiefenau & Speight, 1994

splendens (Meigen, 1822)

The two references are as follows:

Limites génériques et caractéristiques taxonomiques de plusieurs genres de la tribu des Chrysogastrini (Diptera: Syrphidae). 1. Diagnoses génériques et description de

Riponnensia gen. nov. **Ann. Soc. Entomol. Fr.** (NS) 1994. **30(1)**: 217-247.

Limites génériques et caractéristiques taxonomiques de plusieurs genres de la tribu des Chrysogastrini (Diptera: Syrphidae). 2. Statut taxonomique de plusieurs espèces étudiées et analyse du complexe *Melanogaster macquarti* (Loew). **Ann. Soc. Entomol. Fr.** (N.S.) 1994. **30(3)**: 253-271.

SOMERSET HOVERFLIES: REQUEST FOR RECORDS

Ted and Dave Levy
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We are at present working on a companion county booklet of maps etc, for Somerset, similar in design to **Dorset Hoverflies**, which proved quite successful and is still selling steadily. We would appreciate any hoverfly records from readers who have collected in Somerset: old or new, common as well as rare, but with basic data of name, date and locality (grid reference if possible). We would prefer to see specimens that seem unlikely or rare, as we did when compiling the Dorset booklet.

In November we shall (hopefully) take another look at the historic specimens in museums, including Oxford and the Natural History Museum. So anyone knowing of Somerset collections in local museums would also be a great help to the project.

THE FOUR-X FLY: THE TRUE IDENTITY OF THE BUG-IN-THE-BOG

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I always thought that it was my role as a museum biologist that allowed me access to all sorts of weird and wonderful discoveries. Not so. In spite of the fact that I have been made redundant, they still crawl out of the woodwork!

So it was that Fran Bailey at the National Rivers Authority in Reading passed to me an enquiry from a lady who found maggots in her toilet bowl. "Apparently the maggots are breeding in her toilet", I was told. Somewhat less than convinced, I agreed that the lady in question, one Ms Evans, should send me a maggot direct. The next day the package arrived. The first thing I saw was a "field description" which would put any field naturalist to shame. Utterly perfect! Accurate sketches, carefully coloured, of ventral, dorsal and lateral aspects, body segments correctly drawn and numbered, "horns" and other adornments correctly positioned, coloured and even measured in millimetres. Accompanying notes gave me details of time, date and place, the fact that the body was translucent, the number of times it surfaced for air, the fact that it did not leave a slime trail when placed in the sink, etc., etc. I immediately recognised it as a larva of *Myathropa florea* even before I took the elastic band off the box. When I did open the

box, sure enough it contained a recently formed pupa of *M. florea*. The adult, a male, emerged a week later.

So what was it doing in the loo? I telephoned the lady of the house. An hour of telephone conversation later I established that the toilet was upstairs in a modern house with good condition plaster walls, central heating and sealed unit double-glazed windows that do not open. The cistern is sealed and the tank in the loft is also enclosed, being fed directly from the rising main. The loo is in normal use so there is no way that the larva could have been born and raised in the bowl. The only clue was that the family dog apparently drinks from the bowl so I wondered whether he or she would somehow have imported the larva from the local woods. This was the point that Sarah (we had achieved first name terms by now) told me that this was the second larva to be found this year and that it had happened in the two previous years, always at the same time of year, March. Further the larvae were always in their final instar, ready to pupate.

I decided that this was too big a problem to handle. So a telephone call to Maggot Man Rotheray (sorry, Graham. it was not me who christened you!). The only conclusion that Graham could reach was that perhaps the final instar had been bred in a drain somewhere and had wandered from here to look for a pupation site and had somehow done an "incy-wincy spider" impersonation and climbed up the spout. I knew rot-holes and hollow trees as breeding sites for *M. florea*; Graham also suggested rotten tree roots and added that it was quite possible for the larvae to wriggle their way up the toilet pipe to the first floor. Back to Sarah and full marks to Graham; an old cherry tree had been causing problems with the drains for years. The roots had penetrated the rather elderly sewer which drains the loo in question, and regularly caused a blockage. As a result, the roots are periodically exposed for repair and covered over again. Presumably the adult female fly had laid eggs when the roots were exposed. Later the fully fed larvae would have only two choices of direction for escape: down to the sewage works or up to the loo. What happened to those that travelled downstream we shall probably never know, but ours clearly managed to travel some 10 metres along and 4 metres up before finally negotiating the U-bend. Some feat!

Oh, yes - the name. Sarah did not like scientific names and felt that an English one ought to be invented for this particular beast. We thought "bug-in-the-bog" eminently suitable. However we later realised that when Sarah first encountered the larva two years previously she had exclaimed in a loud voice to the household: "what the XXXX is that?" Thus, if one applies the rules of zoological nomenclature strictly, the "bug-in-the-bog" must be reduced by synonymy! I thus propose "*the XXXX Fly Evans*", 1993 as the English name for *Myathropa florea*.

THE HOVERFLY'S KNEES

Leon Truscott
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Having read the editor's piece entitled " and finally, introducing the propellor-driven hoverfly" in **Hoverfly Newsletter No 18**, I was reminded of a shop in Plymouth which I have passed many times. It is a clothes shop called "The Bee's Knees", and , yes, it should really be called "The Hoverfly's Knees". It has a logo painted on the shop front which, although not scientifically accurate, is a real ringer for *Dasysyrphus tricinctus*, with very similar abdominal markings.

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Conopid Recording Scheme



INCORPORATING THE LONCHOPTERIDAE STUDY GROUP

ISSN 1358-5029

Newsletter No.6

June 1995

Further disruption during 1994/95 continues to keep me fully occupied. A change of employers has meant a return to Cardiff after an absence of more than 10 years, with all the upheaval that entails. A house-move and change of address will occur in the near future (I hope!), but in the meantime all correspondence should continue to be sent to my Cirencester address.

The bulk of this newsletter comprises a set of draft keys to the British fauna, prepared originally for the conopid and larger Brachycera identification workshop at Preston Montford earlier this year, and incorporating useful comments arising at that time. These keys include reference to the more likely of the potential additional species from the European fauna, many of which are very similar to recognised British species. I have not attempted to include these within the keys, but have instead given details of 'alert characteristics' which, if noticed, should serve to mark out the specimen concerned as needing further investigation as a possible addition. Many of the potential additions are very widespread in Europe, but would almost certainly be overlooked by recorders relying on current British keys. Any comments on the success or failings of these keys would be gratefully received, as would sight of any specimens which don't fit, or which exhibit any of the noted 'alert characteristics'.

All recorders are urged especially to be on the look out for *Conops vitellinus*, which looks very much like our *C quadrifasciatus*. In investigating this widespread European species, it has become apparent that typical British *C quadrifasciatus* tends to have wider yellow bands on the abdomen than is usual in European specimens: this causes a problem since the extent of the yellow abdominal banding appears to be one of the main characteristics relied upon in keys to the continental fauna in separating these two species. The female of *C vitellinus* can be segregated with reasonable accuracy by the shape of the theca, which is much wider at the base and nearly hemispherical in comparison with that of *C quadrifasciatus*. (see key). Males are more of a problem and cannot be segregated with reliability (in my opinion) on abdominal colour patterns alone. In the meantime, however, any *C quadrifasciatus* in which the yellow banding occupies more than about half the tergite length in the mid-line should be retained until better characteristics for separation can be found.

David Clements - UK Conopid Recording Scheme Organiser
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-oOo-

Observations on *Conops* behaviour in N E Essex

John Bowden

The note by Eric Philp on *Conops* behaviour (CRS Newsletter 5) is interesting but tantalisingly incomplete. From the account given, one would assume that it was females of *Conops ceriaeformis* Mg and/or *C quadrifasciatus* Degeer which were observed assaulting *Tachina fera* (L). But, to mangle some current jargon, one needs to be gender-specific as well as species-specific when recording such behaviour.

In my garden in Colchester I have a patch of apple-mint (*Mentha rotundifolia*), that I keep more-or-less to a patch of about 2m x 0.5m, and which is left every year to flower. From mid-July to the end of August it is swarming with a wide variety of insects, amongst the commonest being various Syrphini and Eristalini, *Lucillia* spp and *Sarcophaga* spp. Some of the larger Tachinidae, such as *T fera*, and larger Muscidae such as *Polietes lardaria* L and *Mesembrina meridiana* L also occur. *Conops ceriaeformis* is frequent, *C flavipes* L infrequent and *C quadrifasciatus* rare, although this last species is not uncommon on ragwort (*Senecio jacobaea*) flowers within about 250m of the flowering mint. Having mentioned an apparent flower preference, it is perhaps worth noting that flowers of spearmint (*Mentha spicata*), about 4m away, seem much less attractive to insects in general than those of the apple-mint.

The flowering mint is also very attractive to hunting wasps, including three species of vespids and at least four of sphecids, three of which are quite reasonable models for *Conops*. These wasps hunt by two distinct methods. The vespids use a rather graceful, rapid, 'bouncy' searching flight, especially around the flower-heads although they do also search down amongst the mint stems, pouncing on prey whilst in flight. The sphecids, on the other hand, stalk on foot, creeping up on prospective prey and then leaping from a distance of about 2-5cm, depending on the situation and, apparently, on the size of the wasp.

Male *C ceriaeformis* commonly behave in an almost exact imitation of the behaviour of the hunting vespids, making in-flight attacks on other insects and much less frequently making a rapid aerial dart from rest against another insect. They attack most frequently *Lucillia*, *Sarcophaga* and the smaller eritalines such as *E arbustorum*, as do all of the wasps, presumably because these smaller flies are usually the ones commonest on the mint flowers. I have seen only one male *C flavipes* on the mint, which was peacefully feeding, and no male *C quadrifasciatus*. Of the many female *Conops* seen on and around the mint flowers (mostly *C ceriaeformis* with some *C flavipes* and no *C quadrifasciatus*) I have seen not a single instance of an attack on another insect, not even on the many *Bombus* workers which also frequent the flowers.

It seems unlikely that there is any reproductive connotation in the behaviour of the male *C ceriaeformis*, unless one assumes that these Essex males are completely unable to recognise females of their own species without a close encounter. The behaviour could, however, be a significant reinforcement of the mimetic or aposematic appearance of male *C ceriaeformis*, and it may be that males which adopt such aggressive behaviour enhance their survival rate by deterring predation.

In the item preceding that on *Conops*, individuals of *Zodion notatum* Mg are reported attacking a variety of other insects. The sex, female, is stated for an attack on the solitary bee *Halictus rubicundus* (Christ), a suspected host, at its nesting site, but is not stated for the attacks on, for example, syrphids and larger calyptrates; both sexes of *Z notatum* are referred to in the text as being present.

Since it would seem that both sexes of *C ceriaeformis* and, possibly, *Z notatum* indulge in aggressive behaviour towards other insects, it is vitally important to record the sex of the individual conopid involved in any future reports of such behaviour.

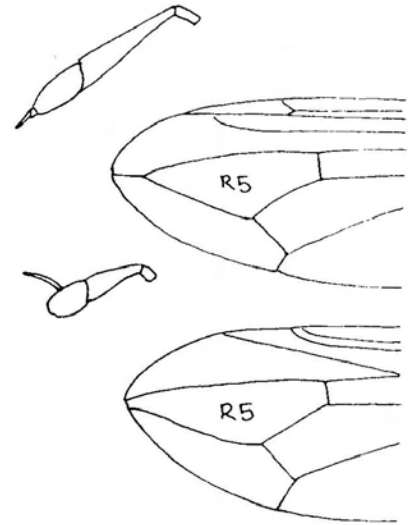
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THE CONOPID FAUNA OF BRITAIN, WITH REFERENCE TO SOME POSSIBLE ADDITIONS

Genera

1 Ocelli absent (although ocellar tubercle present). 3rd antennal segment with apical style. Palpi absent or virtually concealed in mouth cavity. Cell R5 closed. Typically medium to large, patterned flies: abdomen yellow and black banded, or occasionally brown/reddish with yellow markings. (Conopinae) 2



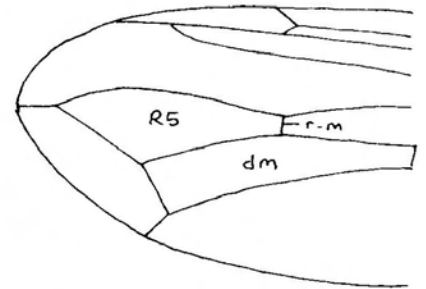
- Ocelli present. 3rd antennal segment with dorsal arista. Palpi small, but always easily visible. Cell R5 usually open. Medium to small flies, typically rather dull and unpatterned: black, greyish or reddish-brown. (Myopinae) 4

2 Proboscis sclerotized and as long or longer than head, or if only just as long, then a large fly with body predominantly reddish-brown and yellow patterned (*C vesicularis*). 3

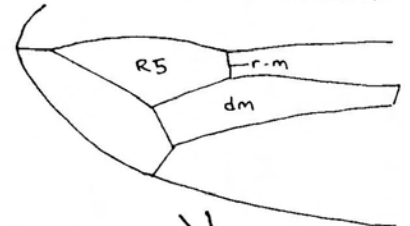
- Proboscis soft, unsclerotized and much shorter than head, usually no longer than the mouth cavity. Leopoldius

nb Medium large black and yellow species with very short sclerotized proboscis, shorter than head or only just as long, and tiny round ocellar tubercle: suspect *Abrachyglossum*.

3 Anterior crossvein (r-m) at or just beyond middle of discal cell (dm). Abdomen only slightly narrowed at base, 2nd and 3rd tergites about the same length. Conops

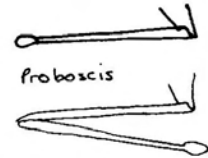


- Anterior crossvein at or beyond second third of discal cell. Abdomen conspicuously narrowed at base, especially in ♂. 2nd tergite often elongated and usually longer than 3rd. Physocephala

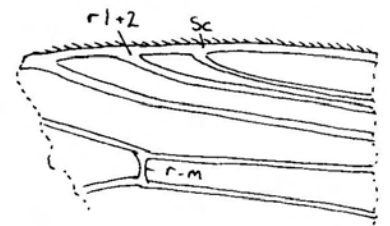


4 Proboscis bent only once, near base. Small greyish species. Zodion

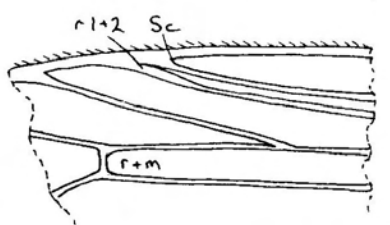
- Proboscis bent twice. Small black/greyish species or medium reddish-brown species. 5



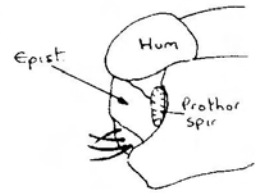
5 End of subcostal vein Sc well separated from end of 1st radial vein (r1+2) on costa. Jowl beneath eye no more than 1/3 vertical height of eye. Medium reddish-brown species, no wing markings. Sicus



- Ends of subcostal vein and 1st radial vein close together on costa. Jowl beneath eye about 1/3 vertical height of eye or conspicuously more. Small blackish/grey species or medium reddish-brown species, wing markings present or not. 6

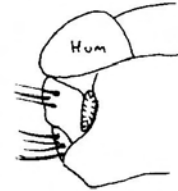


- 6 Jowl $\frac{1}{2}$ vertical depth of eye or more. Small to medium flies, to 15mm long. Prothoracic episternite (area immediately in front of prothoracic spiracle) bare. Reddish-brown or blackish species, abdomen dorso-ventrally flattened, at least at base. ♀♀ without a theca, wings patterned or not. **Myopa**

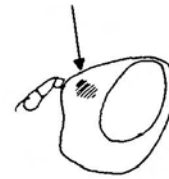


nb Jowl $>\frac{1}{2}$ height of eye, but prothoracic episternite with setae. Proboscis very long and ♀ with theca: suspect *Melanosoma bicolor*.

- Jowl about $\frac{1}{3}-\frac{1}{2}$ vertical height of eye. Small flies, no longer than about 9mm. Prothoracic episternite with setae. Black or greyish species, abdomen cylindrical or laterally flattened. ♀♀ with obvious theca, wings without markings. **Thecophora**



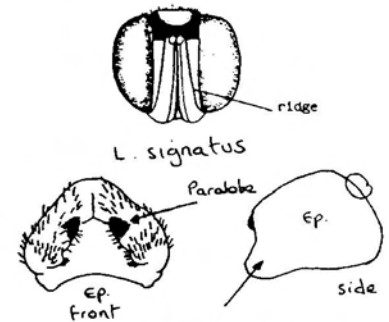
nb Jowl $<\frac{1}{2}$ height of eye, but prothoracic episternite bare and diffuse dark spot on frons between base of antennae and eye rim: suspect *Myopotta*.



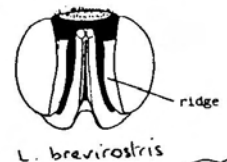
Leopoldius

- 1 Males 2
- Females 3

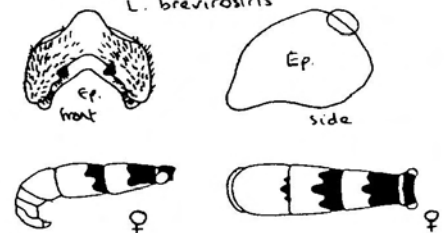
- 2 Face without black streaks either side of central keel, although latter may itself be darkened. Hind femora nearly always with central blackish dorsal patch. Epandrium as shown, with ventral bulge and parolobe pointing into peak of arch. **signatus**



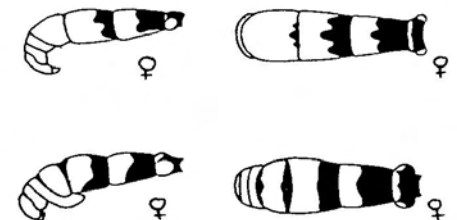
- Face usually with conspicuous black streak either side of central keel. Femora usually completely yellow, or with only vague central dark patch. Epandrium as shown, with no ventral bulge and parolobe pointing into middle of arch. **brevirostris**



- 3 Theca small, not easily visible from side, lateral width at base about three times the height. Black foremarginal bands of abdominal tergites 2-5 extended into three triangular projections. **signatus**



- Theca large, easily visible from side, height equal to or greater than width at base. Black foremarginal bands of abdominal tergites 2-5 usually not extended, or only slightly so. **brevirostris**



nb Any *Leopoldius* specimens which do not have the frons entirely black (ie in which the yellow of the face extends narrowly or broadly across above the antennae): suspect *coronatus* or *diadematus*, or possibly *macrus*. Specimens with front coxae black and wing with conspicuous brown anterior margin: suspect *calceatus*.

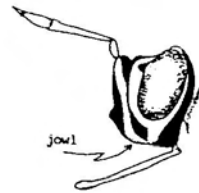


Conops

1 Abdomen black and yellow only. Proboscis longer than head. Medium-sized species, <12mm long. 2

- Abdominal ground colour reddish, with blackish and/or yellow markings. Proboscis not or only slightly longer than head. Large robust species, 12-14mm long. **vesicularis**

2 Jowl with conspicuous black triangular spot, frons with large black spot and with separate smaller spot near upper margin of eye. **strigatus**

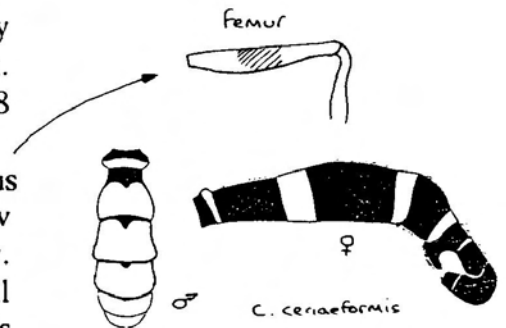


- Jowl without black spots. 3

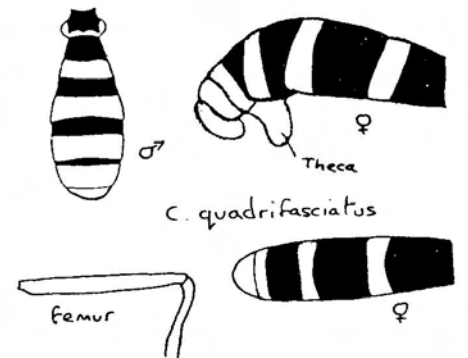
3 Pleurae with shimmering silvery bands of dusting. Scutellum usually entirely black. Theca either small and black, or yellow. 4

- Pleurae matt or sub-shining, without shimmering silvery bands of dusting. Scutellum usually yellowish at apex. Theca large, pointed and black. 8

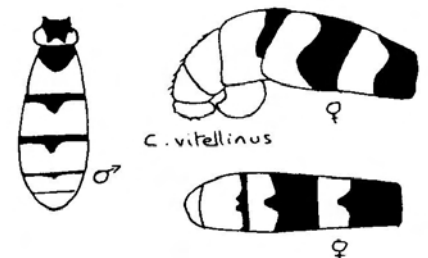
4 Mid and hind femora thickened, usually with conspicuous dark spot or band. ♂ tergites usually mostly yellow and conspicuously swollen in outline when viewed dorsally. ♀ abdomen elongated and of characteristic shape, with small black theca. **ceriaeformis**



- Mid and hind femora not thickened and usually entirely yellow with at most only a vague central darkened patch. ♂ tergites usually with broader black bands and not conspicuously swollen in outline when viewed from above. ♀ abdomen not as above, with yellow theca. **quadrifasciatus**



nb *C. vitellinus* is extremely similar to *C. quadrifasciatus*. In females of the latter, the theca in side view is usually conspicuously higher than the antero-postero width at base, and appears parallel-sided. The yellow abdominal bands on tergites 2 and 3 usually occupy $\frac{1}{3}$ or less of the tergite and are either straight-edged or gently drawn back in the midline. In *vitellinus* females, the theca in side view is larger and hemispherical in shape, as wide or wider at the base than the height. The yellow abdominal bands on tergites 2 and 3 occupy up to $\frac{1}{2}$ the tergite and are sharply drawn back in the midline.



Males are not well segregated, since British *quadrifasciatus* specimens tend to be more extensively marked with yellow than continental material. In *quadrifasciatus* males, the anterior black bands on tergites 2-4 usually occupy $\frac{1}{2}$ or more of the tergite length, at least in the midline, and tend to be straight-edged or gently drawn back in the midline. The femora usually have a darker central patch dorsally. In *vitellinus* males, the black bands on tergites 2-4 occupy no more than $\frac{1}{2}$ the tergite length in the midline, and are sharply drawn out in a triangular extension. The

femora are usually wholly yellow. Further clarification is needed, but in the meantime all '*quadrifasciatus*' with extensive yellow markings should be retained.

8 Frons yellow with dark central patch. **flavipes**

- Frons and face wholly black. **flavipes var melanocephala**

nb Amongst the 'yellow and black' *Conops*, any specimens in which the scutellum is more-or-less entirely yellow should be checked for *scutellatus* or *silaceus*. Any specimens in which the head (ie frons, face and jowls) is entirely yellow, except sometimes for a small streak above the antennae: suspect *insignis*.

Amongst the 'red/brown' *Conops*, any specimens smaller than 12mm: suspect *flavifrons* or *elegans*. Any specimens in which the apical tergites appear to have red-brownish spots on either side: suspect *maculatus*.



Physocephala

1 Black central marking of face usually extending from base of antennae and forking down around oral margin. Large robust black species with \pm yellow markings, 15-20mm long. **nigra**



- Black central marking extending only halfway down face, and not forked. Smaller species usually marked with brown, 10-14mm long. **rufipes**



nb Both the British species have the pleurae matt or subshining, without shimmering bands of dusting. Any specimens in which the pleurae *do* appear to have shimmering dust need to be referred for further checking (numerous possibilities).

If the pleurae are matt and the face and frons entirely yellow: suspect *vittata*.

Zodion

1 Antennae yellowish-brown to reddish-brown. 4-9.5mm long. **cinereum**

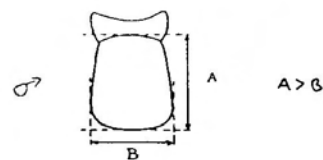
- Antennae entirely black, or at most pale brownish at base of 3rd segment. Somewhat smaller species, 4-6mm long. **notatum**

nb Both British species have terminal abdominal segments which are subshining blackish or dark brown in coloration. Any specimens in which the terminal segments are reddish-orange or reddish-brown: suspect *carceli* or *erythrurum*.

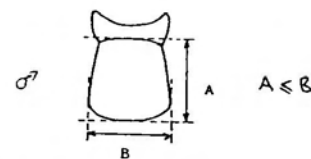
Sicus

1 Males 2
- Females 3

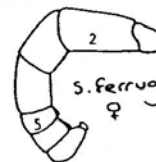
2 2nd tergite slightly but distinctly longer than greatest width, viewed from above. Succeeding tergites usually slightly longer than wide. **ferrugineus**



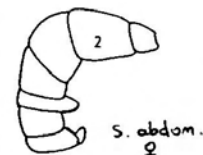
– 2nd tergite at least as wide, usually distinctly wider, than long. Succeeding tergites usually as wide or wider than long. **abdominalis**



3 Abdomen long and cylindrical, 2nd tergite viewed from side about twice length of maximum depth. No conspicuous theca visible in side view. **ferrugineus**



Abdomen shorter and dorsoventrally flattened at base. 2nd tergite from side at most 1½ times long as deep. *Conspicuous projecting theca.* **abdominalis**



nb ♀ specimens in which the 2nd tergite is intermediate in shape, and in which a visibly raised theca is present, should be checked for *fusenensis*. Male *fusenensis* is unknown.

In all three of the above, the two sections of the proboscis are about equal in length. Any specimens in which the last section is much shorter than the basal section (ie about 1/3 as long), and in which the front femora have a dark spot on the outer face would probably be *femorialis*, although this may be a mythical species.

Myopa

1 Jowls bare (or possibly with just a scant few whitish hairs). Wings with no spots or markings. Usually dark or blackish species. 2



– Jowls with conspicuous 'beard' of whitish hairs. Wings at least with black spot on middle crossvein, often with more complex pattern. Usually reddish-brown flies. 3

2 Length 6–15mm, body blackish brown, with reddish-brown sides and coxae. Conspicuously silver pollinose, particularly on thorax and abdomen. 2nd antennal segment usually distinctly longer than 3rd. **fasciata**

nb Mouth margin with isolated black spot at front: suspect *variegata*. Abdomen almost entirely reddish-brown: suspect *dorsalis*.

– Length 3.5–5mm, body black or very dark brown all over, matt or subshining with scant silvery pollinosity. Femora obviously thickened with two ventral rows of short stubby bristles. 2nd antennal segment about equal in length to 3rd. **oculta**

nb Jowls with a few scant long white hairs and femora not obviously thickened: suspect *morio*.

3 Anterior crossvein white, wings usually with patterning of brown and yellowish-white on forks. Occiput behind eye swollen, with 1-4 obvious purple-brown spots. Very variable in size, 8-12mm long. **buccata**



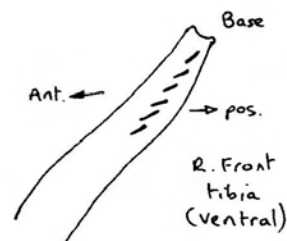
- Anterior crossvein black, usually within a small black spot, other wing markings present or not. Occiput without distinct purple-brown spots. 4

nb If occiput has purple-brown spots and anterior crossvein is black, suspect *picta*. This distinctive species has a conspicuous central black spot in cell R5. The proboscis is more than 3x head height in length and the fly has a rather ornamented appearance including striped femora. 8-11mm long.

4 Longer-haired species, hairs on disc of last two tergites as long or longer than hind metatarsus. 5

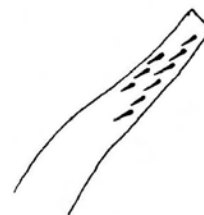
- Shorter-haired species, hairs on disc of last two tergites shorter than hind metatarsus. 6

5 Very hairy species, hairs on tibiae often more than twice as long as tibia is thick. Abdomen usually a somewhat dingy orange-yellow colour. Pleurae (other than mesopleuron) with conspicuous darkened patches. All tibiae lacking adpressed postero-ventral spinose bristles at base.



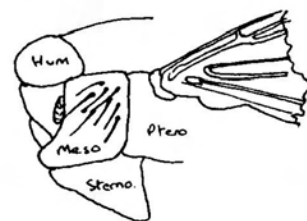
vicaria

- Rather less hairy, hairs on tibiae not much longer than tibia is thick, often less. Abdomen usually blood red colour. Pleurae more uniformly reddish-yellow. Four anterior tibiae with adpressed postero-ventral spinose bristles at base.



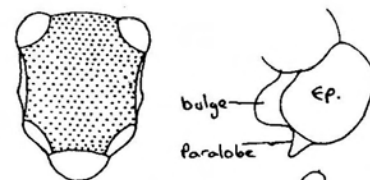
strandii

6 Mesopleuron with 5-9 long black setae. Wing with numerous distinct black spots and brownish patterning. Smaller species, 5.5-8mm long. Thorax typically black right up to base of scutellum. **polystigma**

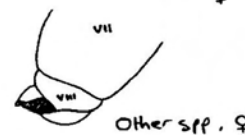
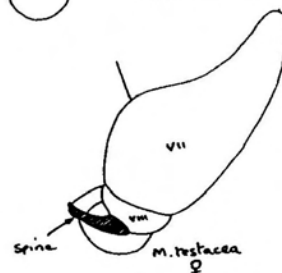


- Mesopleuron without setae (occasionally with just 1-2). Small to large species (to 11mm long), other characters various. 7

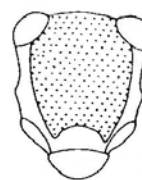
7 Thorax usually black right up to base of scutellum. ♂ *epandrium* with conspicuous ventral bulge, *paralobe* triangular. ♀ *anal segment* with long shining spines either side, length at least 3x basal width. Wing usually with only anterior crossvein blackened, although other patterning may also occur. Variable length, 6-11mm. Hairs on upper face usually all pale; palpi dark brown. **testacea**



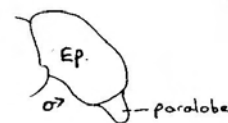
- Thorax not usually black right up to base of scutellum. Wing usually with black spots other than just on anterior crossvein, and brown patterning. Usually some black hairs



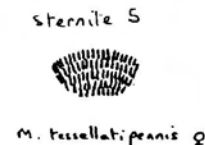
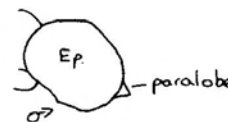
on upper face. ♂ epandrium without conspicuous ventral bulge; ♀ anal segment with shorter spines either side. 8



8 Usually larger species, 6.5–10mm long. ♂ *epandrium elongate, with huge rounded paralobe obvious in side view.* ♀ *5th sternite with narrow crescent of pegs, crescent ≥4x wide as deep.* Wing usually, but not always, with several black spots and brownish patterning. Proboscis last section as long as front tarsi. Palpi pale tawny brown. **extricata**



– Smaller species, 5.5–8mm long. ♂ *epandrium rounded with small triangular paralobe, inconspicuous in side view.* ♀ *5th sternite with more compact crescent of pegs, crescent no more than about 3.5x wide as deep.* Wing with several black spots and brown patterning. Proboscis last section not as long as front tarsi. Palpi dark brown.



tessellatipennis

Thecophora

1 Abdomen shining black with scanty, patchy greyish dusting. Legs mostly black, except basal ½ of hind femora (and sometimes others) and all knees yellow. Dusting on dorsum of thorax with inconspicuous striping. 4–7mm long. **atra**

nb In *atra*, 2nd antennal segment is usually longer than 3rd, and the last section of the proboscis is longer than the head height. Any specimens in which the 2nd and 3rd antennal segments are more or less equal in length, the last section of the proboscis is shorter than the head height and which is in the length range 2.5–5mm should be checked for *pusilla*.

– Abdomen extensively grey dusted, tending towards golden-grey. Legs more extensively yellowish (variable), with femora usually yellow in basal 2/3 or more. Dusting on dorsum usually with conspicuous pattern of stripes and patches visible, including one central longitudinal stripe. Usually larger, 6–9mm long. **fulvipes**



nb In *fulvipes*, 2nd antennal segment is usually longer than 3rd. Any specimens in which the 2nd and 3rd antennal segments are more or less equal, and/or in which there appear to be two parallel central longitudinal stripes in the thoracic dusting, should be referred for checking (several possibilities).



DAVID CLEMENTS

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