HOVERFLY NEWSLETTER

NUMBER 22
AUGUST 1996

Dipterists Forum

Since the **Hoverfly Newsletter** first appeared every single issue has featured at least one new contributor; long may this continue. Readers will be aware that since the Dipterists Forum was created the newsletter has carried an ISBN number, and, as a result, it now qualifies as a formal publication. This is of course good news, but I wish to emphasise that it still remains a newsletter, so I hope that readers will not be deterred by the aura of formality from contributing the sort of informal exchanges, requests for others' views etc. that have been included here in the past.

Readers will also have noticed the Dipterists Forum logo which appears in the heading above. I believe that there is also a place for a logo for the newsletter itself, and invite readers who are more artistic than I to design one. Those who have retained **Hoverfly Newsletter No. 12** will recall the *Doros conopseus* drawing which adorned the first page of that issue, and recorders will also be familiar with the (legless and wingless) *Chrysotoxum festivum* logo used by the recording scheme. I would be grateful for a similar drawing (including wings and legs) of, say, *Scaeva pyrastri* or *Dasysyrphus albostriatus* for use as an emblem for this publication.

Copy for newsletter No. 23 should be sent to me, **David Iliff, Green Willows, Station Road, Woodmancote, Cheltenham, Glos, GL52 4HN**, to reach me by 9 December 1996.

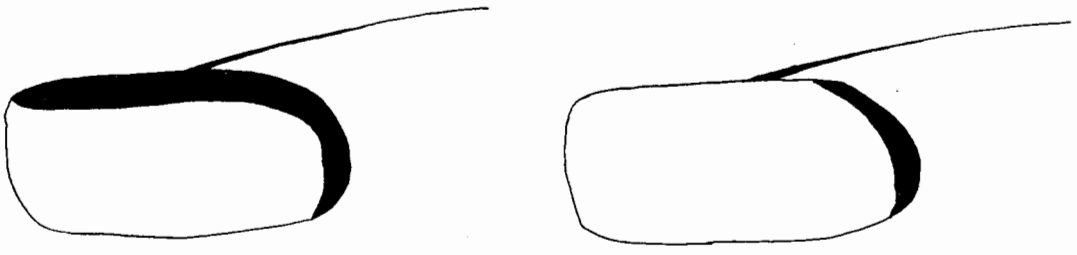
CONTENTS

IDENTIFICATION OF MALE *MELANOSTOMA* SPECIES: THE EASY WAY

Colin W Plant
14 West Road, Bishops Stortford, Hertfordshire, CM23 3QP

I was most intrigued by Roger Hawkins' article in **Hoverfly Newsletter No. 20** on the separation of males of *Melanostoma mellinum* and *M. scalare*. I venture to suggest that any measurement performed on the abdominal segments of a dried specimen is likely to be fraught with problems due to the shrinkage and distortion which always takes place. Indeed, Roger did mention this in his note. Reserve this method for specimens in fluid preservative - if you must. But are we all so blind that we can only follow the characters handed down by Alan Stubbs?! Take another look, this time beyond the keys. *M.mellinum* males may have the basal third, sometimes more, of the front femora darkened; those of *M. scalare* are entirely clear yellow with no hint of darkening at all. I have used this character for many years and. looking somewhat hastily through my notebooks, I reckon I have seen in the order of 3000 *M. mellinum* males and about 2500 *M. scalare* males - mostly from malaise traps in southern England and Worcestershire, but also much dried material from Britain, France and Hungary. After reading Roger's note I checked the abdominal measurements carefully on a randomly selected sample of 200 males of each species preserved in alcohol (therefore less likely to be distorted than dried material) and of 50 males of each preserved dry. The leg colour character works.

Interestingly, the darkening of the third antennal segment also varies. I have drawn the two extremes that I have observed here, though I do have a few *M. scalare* that are somewhat intermediate between the two.



M. mellinum M. scalare

Extent of the dark area on 3rd antennal segment of *Melanostoma* males

HOVERFLY RECORDING ON OFFSHORE ISLANDS: MIGRATION OR ITINERANCY?

Tony Parsons
Barnfield, Tower Hill Road, Crewkerne, Somerset, TA18 8BJ

I was particularly interested in Mike Pennington's note on *Helophilus trivittatus* in Shetland (**Hoverfly Newsletter No.21**). I have been attempting to study the status of insects of all orders on the island of Steep Holm (North Somerset: ST26) for over 20 years, and have been doing similar work on Lundy (North Devon: SS14) for the past 14 years.

The assessment of species as "non-resident" is often extremely difficult and relates to many factors, such as larval habitats or hosts, larval/pupal searches and rearing, climatic conditions, dates and numbers of individuals, presence or absence of "known migrants", presence and numbers of parasites of the species involved and so on. However continual monitoring over many years does make the sudden appearance of "obvious" species, such as many hoverflies, easier to detect.

Helophilus trivittatus is not a common species in the Bristol Channel area. On Steep Holm there are records of single individuals from August 1973 and July 1982. However on Lundy I recorded the species on 38 occasions between 30th July and 4th August 1995 at six localities from south to north-west point and on east and west coasts. There is only one previous record from Lundy (28th August 1986) and I am certain that the species is not normally resident. It was not recorded on Steep Holm in 1995, although it is possible that I missed it since I left the island on 15th July and did not return until 9th August.

I dislike the term "migrant" as applied to the majority of insects - apart from the oft-quoted Monarch butterfly, there are very few real migrants in the insect world. I prefer to treat relevant movements as degrees of **itinerancy**, within which lie dispersal, migration, vagrancy and the requirements of aestivation and hibernation.

"Migration" in hoverflies is said to involve only Syrphini, but itinerancy certainly involves other tribes. There is no suitable larval habitat on Steep Holm for Eristalini except for *Eristalinus aeneus*, yet *Eristalis tenax* is frequent and sometimes abundant (on 3rd October 1985 at least 2,000 came in off the sea, apparently from the south west), *E. pertinax* occurs regularly and *E. arbustorum* has occurred on two occasions, as has *Helophilus pendulus*. *Rhingia campestris* is occasional (there is no livestock on the island and the only other possible breeding sites would be in gull faeces or nest debris, both of which dry out rapidly in summer). *Neoascia meticulosa* has occurred once as has *Xylota segnis*, and *Syritta pipiens* is frequent although there is no compost, silage or similar material on the island. *Cheilosia bergenstammi* occurred (at least three) in August 1981 and *C. pagana* in May 1995.

I would suggest that there are two reasons why such species (and many other insects) are not accepted as "migrants": firstly because they do not occur in vast swarms as do

species like *Episyrphus balteatus* and the Bibionid *Dilophus febrilis*; secondly because it is only on the discrete site of an offshore island that many species are likely to cause an eyebrow to be raised and perhaps be assessable as itinerants.

One only has to look at migrant birds for comparison. If one had suggested, in the 1950s, that Aquatic Warblers were regular and frequent in Britain, I fear that one would probably have been treated as mentally unstable. Yet modern techniques have resulted in about 60 Aquatic Warblers being ringed in Somerset.

OBSERVATIONS ON THE SWARMING OF *CHEILOSIA GROSSA*

Barry Brigden
23 Galway Avenue, Bispham, Blackpool, Lancs, FY2 0LL

On 10th April 1995 I observed two male *Cheilosia grossa* hovering about two metres from the ground in a rough field by the side of my local pond (Kincraig Pond, Bispham, Blackpool; grid ref. 34/327404), and a further male on 13th April 1995 hovering at a similar height over a stony footpath about 80 metres from the first sighting. Incidentally, the Kincraig Pond site has turned up 61 species of hoverfly since I started recording last year.

On that same day (13th April), which was quite warm and sunny with just a light breeze at about 3pm, I was quite unprepared to see a small swarm of approximately 30 of these hoverflies in a different part of the same site, approximately 40 metres from the edge of the pond. I had walked past the spot only 5 minutes previously and there was no sign of them then. I caught about 10 of them, and, as expected, all were males; I presume that all the others were males. They were hovering in a loose swarm over a path of short trampled grass which traverses a rough field, at heights varying between about 2 and 4 metres. Individuals would suddenly dart off at various angles for half a metre or so, and then continue hovering in their new position for a few seconds before repeating the manoeuvre. I watched this behaviour for 5 minutes or so, and then explored further areas of the site, but saw no more examples of this species. Fifteen minutes later I returned to where I had previously observed the swarm, but there was not one to be seen, although weather conditions were apparently the same. Sweeping the vegetation below and close by the swarm both at the time of my observations and again at the later visit produced neither males nor females. Examination of patches of thistles, some 20 metres away, was also fruitless.

I returned to the site the next day and saw about 10 scattered (i.e not swarming) individuals, all in the air, and again all males. Sweeping was again unsuccessful. I saw no more swarms, and no females at the site at any time.

My observations prompt me to pose a number of questions:

1. Why did the swarm occur, and at that particular place at that particular time?

2. Was it some kind of courtship display? But where were the females? Were there females nearby which I failed to spot?

3. If it was a courtship display were the males just living in hope that any females thereabouts would be attracted to the swarm? Is it the mass of males that might attract females? Do the males emit attractive pheromones, and, if so, does a swarm of 30± emit a more concentrated chemical? How far can a female see, or smell?

4. Was there a marker for the swarm? There was no dominant tree or bush. Was the short grass of the path, over which the flies swarmed, important compared with the longer grass at the sides of the path?

5. What were the requisite conditions to trigger a swarm?

6. Had these conditions lasted for only a short duration, after which there was some, to humans, imperceptible but significant change in temperature, or some subtle change of light? Or did the swarm occur at some minutely critical time of day?

7. Had the males, indeed, attracted females and then dispersed? Or, having not attracted females, had they given up and moved on to do other things?

8. Were the males doing nothing more than socialising, enjoying a good get-together for a few minutes and then going on their way?

A lot of questions here! I would be most interested to learn the answers.

CHEILOSIA SEMIFASCIATA IN HAMPSHIRE

Matthew Oates
Adviser on Nature Conservation, The National Trust, 33 Sheep Street, Cirencester, Glos, GL7 1QW

During the warm springs of 1989 and 1990 *Cheilosia semifasciata* was found breeding on orpine (*Sedum telephium*) in Pamber Forest LNR, North Hampshire. The plant occurred in two localities, about a quarter of a mile apart. Several clumps were present in an area of regenerating hazel coppice under thinly spaced oak and ash standards along a minor stream valley (Site A), and two sizeable clumps grew in a sunny position along the south-facing edge of a recently-created pipeline corridor (Site B).

On 3rd May 1989 a female was taken at Site A and that week another was taken in a

malaise trap site nearby. In 1990 a male was taken at Site A on 25th April, whilst on 6th May a female was watched egg-laying at Site A, and a male was taken imbibing moisture from a puddle along an open ride about 100 metres away.

In 1989, larvae were numerous on about six orpine clumps in sun spots or dappled shade at Site A. A few were found at the (shaded) back of a rather exposed clump at Site B. In 1990, larvae were absent from Site B and few were found during an extensive search at Site A, where hazel coppice had regrown to the extent that the plants had were becoming shaded.

Egg-laying took place on the underside of orpine leaves three whorls down from the plant's tip. Larvae exclusively use the lower leaves, producing distinctive larval damage, each larva tunnelling through two to five leaves, leaving the cuticle intact. The lower leaves drop off in high summer (at least during the drought years), just after the larvae have vacated their leaves.

Given the likelihood of a short flight season and low adult populations, plus the size and insignificance of the hoverfly, it is probable that searching for larvae on semi-shaded orpine clumps during the period late May to late June is the soundest way of locating the species in southern England. Larval damage, which could well be diagnostic, can remain evident for longer; for example, I found apparent larval damage on orpine at Southwick Woods, South-East Hampshire, in August 1989. The major difficulty is, of course, locating orpine!

My experience suggests that *C. semifasciata* utilizes orpine plants which receive dappled sunshine, or certainly no more than a couple of hours of direct sunshine a day. Larvae were not found on an exposed clump and likewise, none were found at Pamber Site A in 1994, by which time coppice regrowth had cast heavy shade. In woodland, I suspect that the hoverfly requires continuity of supply of vigorous orpine plants in recently coppiced or cleared areas. It has probably declined severely in this century due to the demise of coppicing. On nature reserves, such as Pamber, where the species is confined to a few orpine clumps, it might be necessary to coppice surrounding scrub, patchily, on a very short rotation. Another option is to increase the plant by propagation, as it roots readily in water.

HOVERFLY RECORDING IN GLOUCESTERSHIRE: SOME INTRIGUING OLD RECORDS

David Iliff
Green Willows, Station Road, Woodmancote, Cheltenham, Glos, GL52 4HN

For some time now I have been preparing a booklet on the Hoverflies of Gloucestershire on the lines of publications that have appeared in recent years for several other counties. I am grateful to many newsletter readers and recorders, and to

the recording scheme organisers for their help towards this project. The county has been well covered by recorders in recent years, and an impressive species list has emerged, including a number of exciting finds such as *Eriozona syrphoides*, *Pipizella maculipennis* and *Chalcosyrphus eunotus*.

There are also some intriguing old records from the last century and the early part of this one of species which have not been found in recent years, but I live in hope that some at least may be found again. These records are mostly from impeccable sources and the majority are no doubt authentic, but there are a few which seem surprising, to say the least, in the light of current knowledge of species distribution.

There are 4 old records of the very attractive species *Cheilosia chrysocoma* from sites on the Cotswolds. At least two of these records are over a hundred years old. Another very rare hoverfly with a similar number of old county records is *Didea alneti*. One of these was at Slad in the Cotswolds (in 1917), and two *D. alneti* specimens were recorded, in the 1890s, in the "Forest of Dean", a rather imprecise location for those of us who plot records on dot maps. One of the Forest of Dean specimens is in the Natural History Museum collection, which also has a *D. alneti* taken in "Hay Wood" by C J Wainwright. Unfortunately Wainwright, who normally supplied county details, omitted them on this occasion. There is a Hay Wood in Gloucestershire, near Dymock, which includes habitats very similar to the Forest of Dean, and Wainwright often recorded in the county. It would be helpful however to have confirmation whether the Hay Wood is in fact the Gloucestershire one. Does anyone know the answer?

V R Perkins recorded many hoverflies at Wotton-under-Edge, including two seemingly unlikely ones for the area, *Chrysotoxum octomaculatum* and *Eristalis rupium*. I strongly suspect the former to have been a misidentification: Verrall's key separates this species from similar ones on the basis of size, shape and the predominance of yellow markings over black on the abdomen, features which today would be considered inadequate to determine this species. H L F Audcent, who lists in **Bristol Insect Fauna** most of Perkins' records does not include *C. octomaculatum*. He does, however, quote the *E. rupium* record, along with another *E. rupium* taken by C J Watkins at Painswick. In contrast to the situation with *Chrysotoxum* it would seem unlikely that any confusion would have arisen over the identification of *E. rupium*; I suspect therefore that these records are authentic, and that *E. rupium* was indeed present in the Cotswolds in earlier years.

R L Coe's key to the Syrphidae quotes a record (unattributed and undated) for *Eristalis cryptarum* in "Glos (Cleeve)". Cleeve Hill would seem to be an unlikely habitat for this species, and I have not been able to trace the source of the record. It is possible that this may have been the result of confusion with Stowford Cleeve in Devon, where the species has been recorded several times. If any reader knows the origin of the Coe record I would be most grateful for details.

RECENT LITERATURE

Badmin, J. 1994 Hoverfly (Dipt., Syrphidae) predators of the hellebore aphid *Macrosiphum hellebori* Theobald and Walton (Hem., Aphididae). *Entomologist's Monthly Magazine* **130**(1564-1567): 238
Macrosiphum hellebori; Parasitic Hymenoptera; Larvae; Predator-Prey Interaction; England; Uk

Bankowska, R. 1994 Diversification of Syrphidae (Diptera) fauna in the canopy of Polish pine forests in relation to forest stand age and forest health zones. *Fragmenta Faunistica (Warsaw)* **36**(19-25): 469-484 English (Polish sum.)

Barendregt, A. 1994 Possibilities of nature-development from the target group of the hoverflies (Diptera: Syrphidae). *Entomologische Berichten (Amsterdam)* **54**(4): 75-79 Netherlandish (English sum.)

Barkalov, A.V. 1993 Hoverflies of the genus *Cheilosia* Meigen, 1822 (Diptera, Syrphidae) from the Caucasus. *Entomologicheskoe Obozrenie* **72**(3): 698-727, 731 Russian
Taxonomic Review; *C. rhynchops* new record; *C. semifasciata* new record; *C. honesta* new record; *C. melanopa* new record; *C. proxima* new record; *C. aenigmatosa* new species; *C. lukashovae* new species; *C. atypica* new species; *C. teberdensis* new species; *C. paragigantea* new species; Morphology; Description; Taxonomy; Geographic Distribution; Russia

Barkalov, A.V. 1994 Hoverflies of the genus *Cheilosia* Meigen, 1822 (Diptera, Syrphidae). *Entomological Review (English Translation of Entomologicheskoye Obozreniye)* **73**(5): 28-58

Barr, B. 1995 Feeding behaviour and mouthpart structure of larvae of *Microdon eggeri* and *Microdon mutabilis* (Diptera, Syrphidae) *Dipterist Digest* **2**(1): 31-36

Brunel, E. & Cadou, D. 1995 Syrphid larvae (Diptera, Syrphidae) mining the roots of artichoke (Cynara scolymus L.) in Brittany *Dipterist Digest* **1**(2): 69-71

Chu, X.P. 1994 A new species of Syrphidae (Diptera). *Acta Entomologica Sinica* **37**(4): 494-496 Chinese (English sum.)
The Syrphid flies of the genus *Hammerschmidtia* Schummel, first record from China, and a new species of the genus, *Hammerschmidtia tropia* Chu sp. nov., are described in this paper.

Ciepielewska, D. 1993 Predatory Syrphidae (Diptera) occurring on the papilionaceous plant cultures in the region of Olsztyn. *Polskie Pismo Entomologiczne* **62**(1-4): 231-241 Polish (English sum.)
Research Article; *Sphaerophoria scripta*; *Episyrphus balteatus*; *Melanostoma scalare*; *Platycheirus peltatus*; *Episyrphus auricollis*; *Dasysyrphus lunulatus*; *Metasyrphus luniger*; *Metasyrphus corollae*; *Meligramma triangulifera*; *Syrphus torvus*; *Platycheirus clypeatus*; *Melanostoma mellinum*; *Sphaerophoria menthastri*; Alfalfa; Red Clover; Faba Beans; Pea; Field Pea; Species Composition; Population Dynamics; Seasonality; Biological Control

Claussen, C.; Goeldlin DeTiefenau, P. & Lucas, J.A.W. 1994 The identity of *Pipizella heringii* (Zetterstedt) var. *hispanica* Strobl, 1909-with a revision of the types of the Palaearctic species of the genus *Heringia* Rondani, 1856, sensu stricto (Diptera: Syrphidae). *Mitteilungen der Schweizerischen Entomologischen Gesellschaft* **67**(3-4): 309-326 German (German; English sum.)

Doczkal, D. & Schmid, U. 1994 Three new species of the genus *Epistrophe* (Diptera: Syrphidae), with a key for the species known from Germany. *Stuttgarter Beitraege zur Naturkunde Serie A (Biologie)* **0**(507): 1-32 German (German; English sum.)

Freese, G. 1994 The insect complexes associated with the stems of seven thistle species. *Entomologia Generalis* **19**(3): 191-207 English (English; German sum.)
Cheilosia albipila (Meigen 1838), *C. fraterna* (Meigen 1830) (Diptera: Syrphidae)

Hanssen, U. 1993 Dependence of flower-visiting insects on dry biotopes in gravel pits. *Faunistisch-Oekologische Mitteilungen Supplement* **0**(15): 9-37 German (German; English sum.)
Only *Rhingia campestris* seems to be closely adapted to blue-violet, deep blossom types.

Hartley, I.R. & Quicke, D.L.J. 1994 The diet of nestling Corn Buntings of North Uist: Insects not grain. *Scottish Birds* **17**(3): 169-170
Miliaria calandra; Coleoptera; Lepidoptera; Orthoptera; Dermaptera; Cranefly; Opiliones; Syrphidae; Hymenoptera; Araneae; Gastropoda; Homoptera; Plant Material; Fecal Samples; Gizzard Content; Scotland; Uk

Harwood, R.W.J.; Hickman, J.M.; Macleod, A.; Sherratt, T.N. & Wratten, S.D. 1994 Managing field margins for hoverflies *Field Margins: Integrating Agriculture and Conservation. Boatman, N. ed. Farnham UK British Crop Protection Council* **58**: 147-152 St: Bcpc-Monogr. 58
boundaries; forms; population density; pest control; Aphididae; Homoptera; Syrphidae; Diptera; British Isles

Hasken, K.H. & Poehling, H.M. 1995 Effects of different intensities of fertilisers and pesticides on aphids and aphid predators in winter wheat. *Agriculture Ecosystems & Environment* **52**(1): 45-50

Haslett, J.R. 1994 Community structure and the fractal dimensions of mountain habitats. *J.Theoretical Biology* **167**(4): 407-411
Research Article; Syrphidae; Species Richness

Heal, J. 1995 Of what use are the bright colours of hoverflies *Dipterist Digest* **2**(1): 1-4

Hippa, H. & Thompson, F.C. 1994 Revision of the *Sterphus cybele* species group (Diptera: Syrphidae). *Proceedings of the Entomological Society of Washington* **96**(3): 483-495
research article; taxonomic key; *Sterphus cybele*; *Sterphus janzeni* new species; *Sterphus calypso* new species; *Sterphus cydippe* new species; *Sterphus venezuelensis* new species; morphology; phylogeny; Costa Rica; Panama; Bolivia; Venezuela; Colombia

Hoevemeyer, K. 1995 Trophic links, nutrient fluxes, and natural history in the *Allium ursinum* food web, with particular reference to life history traits of two hoverfly herbivores (Diptera: Syrphidae). *Oecologia* **102**(1): 86-94
Allium-ursinum; food-webs; life-history; Syrphidae-*Cheilosia fasciata*, *Portevinia maculata*; trophic-relationships

Holloway, G.J. 1994 Separation of some *Eristalis* species using abdominal colour pattern *Br.J.Entomol.Nat.Hist.* 7(3): 99-101
color; separation techniques; species composition; *Eristalis*; Diptera; Syrphidae

Hopper, K.R.; Aidara, S.; Agret, S.; Cabal, J.; Coutinot, D.; Dabire, R.; Lesieux, C.; Kirk, G.; Reichert, S.; Tronchetti, F. & Vidal, J. 1995 Natural enemy impact on the abundance of *Diuraphis noxia* (Homoptera: Aphididae) in wheat in southern France. *Environmental Entomology* **24**(2): 402-408
The predatory syrphids *Episyrphus balteatus* De Geer, *Metasyrphus corollae* F., and *Sphaerophoria scripta* L.

Hurkmans, W. & DeGoffau, L. 1995 The genus *Merodon* in The Netherlands (Diptera Syrphidae). *Entomologische Berichten (Amsterdam)* **55**(2): 21-29 Netherlandish

Iliff, D. 1996 *Chalcosyrphus eunotus* (Diptera, Syrphidae) female found in Gloucestershire *Dipterist Digest* **2**(2): 95-96

Jentzsch, M. 1993 Hoverfly finds from Upper Algaeu near Nesselwang (Dipt., Syrphidae). *Entomologische Nachrichten und Berichte* **37**(4): 254-256 German
Research Article; 41 Species; Rare Species; Food Plant; Habitat; Germany

Junck, C.; Schoos, F. & Schoos, R. 1994 Vegetation and fauna of the Schoofsboesch quarry near Bettendorf. *Bulletin de la Societe des Naturalistes Luxembourgeois* **0**(95): 49-102 German (French sum.)
Three species of Trichoptera and four syrphid species are new for the fauna of Luxembourg.

Kazenas, V.L. 1994 Unusual prey of digger wasps from genus *Palarus* Latr. (Hymenoptera, Sphecidae). *Byulleten' Moskovskogo Obshchestva Ispytatelei Prirody Otdel Biologicheskii* **99**(1): 115 Russian (English sum.)
Research article; *Palarus pictiventris*; *Paragus tibialis*; *Heterotropus sulphureus*; syrphidae; bombyliidae; larval feeding; prey storage; evolution; Russia

Kralikova, A. & Degma, P. 1995 Faunistic-ecological analysis of hoverflies (Diptera: Syrphidae) in some landscape elements of the Danubian lowland with a special reference to the aphidophagous species. Part II
Ekologia-Bratisl.-Ecology-Bratisl. . **14**(3): 237-246 English (English; Slovak sum.)
population-density; Diptera-; Syrphidae-; Slovakia-; habitat-preferences

Kristin, A. 1994 Breeding biology and diet of the bee-eater (*Merops apiaster*) in Slovakia. *Biologia (Bratislava)* **49**(2): 273-279
The occurrence of the mimetic coloured syrphids and tabanids and aposematic butterflies (Nymphalidae, Papilionidae) were characteristic.

Krotova, I.G. 1993 Parasites of aphidophagous Syrphidae (Diptera) from cereals of western Siberia. *Zoologicheskii Zhurnal* **72**(12): 58-62 Russian (Russian; English sum.)
Research article; *Promethes sulcator*; *Diplazon laetatorius*; *Syrphoctonus signatus*; *Woldstedtius biguttatus*; *Pachyneuron groenlandicum*; hymenoptera; seasonality; Russia

Krotova, I.G. 1994 Parasites of aphidophagous Syrphidae (Diptera) from cereal crops of West Siberia. *Entomological Review (English Translation of Entomologicheskoye Obozreniye)* **73**(3): 153-158
Research article; *Promethus sulcator*, *Diplazon laetatorius*; *Syrohoctonus signatus*; *Woldstedtius biguttatus*; *Pachyneuron groenlandicum*; aphids; hyperparasitism; seasons; biological control; Russia

Kuznetsov, S.Yu 1993 (1994) First-instar larvae of hoverflies of the subfamily Syrphinae (Diptera, Syrphidae). Entomological Review (English Translation of Entomologicheskoye Obozreniye) **72**(9): 41-70
Research Article; Taxonomic Key; Description; Taxonomy

Levy, E.T. & Levy, D.A. 1995 Eoseristalis cryptarum (Diptera, Syrphidae) - on Dartmoor *Dipterist Digest* **1**(2): 86

Li, Q. & He, J. 1994 The description of a new species of the genus *Chrysotoxum* Megin (Diptera, Syrphidae). *Entomotaxonomia* **16**(2): 150-152 Chinese (Chinese; English sum.)
Research Article; *Chrysotoxum maoershanicum* New Species; Taxonomy; Geographic Distribution; China

Limonta, L. & Antignati, E. 1994 Researches on the main pollinating insects of buckwheat (*Fagopyrum esculentum* Moench) in Valtellina. *Apicoltore Moderno* **85**(1): 5-12 Italian (Italian; English sum.)
Research Article; *Fagopyrum esculentum*; *Apis mellifera*; *Eristalis*; *Dilophus febrilis*; *Andrena labialis*; *Bombus lapidarius*; Cross-Fertilization; Daily activity pattern; Italy

Lindgaard-Hansen, J.E. & Molau, U. 1994 Pollination biology, mating system, and seed set in a Danish population of *Saxifraga granulata*. *Nordic J.Botany* **14**(3): 257-268
Research Article; *Saxifraga granulata*; *Rhamphomyia sulcata*; *Cheilosia* spp.; *Polyblepharis opaca*; *Halictus* spp.; Sexual Reproduction; Vegetative Reproduction; Bulbil; Flower coloration; Nectar production; Competition; Foraging; England; Uk; Denmark

Lunau, K. & Wacht, S. 1994 Optical releasers of the innate proboscis extension in the hoverfly *Eristalis tenax* L. (Syrphidae, Diptera). *J.Comparative Physiology A Sensory Neural and Behavioral Physiology* **174**(5): 575-579
Research Article; *Eristalis tenax*; Photoreceptor Type R8y; Pollen feeding; Color preference; Wavelength-Specific Behavior; Behavioral tests

Lykouressis, D.P. & Mentzos, G.V. 1995 Effects of biological control agents and insecticides on the population development of *Myzus nicotianae* Blackman (Homoptera: Aphididae) on tobacco. *Agriculture Ecosystems & Environment* **52**(1): 57-64
Aphidiid parasitoids and fungal diseases were the main biological mortality agents with coccinellids, syrphids and chrysopids present in low numbers

Maibach, A. & Goeldlin De Tiefenau, P. 1994 Generic limits and taxonomic features of some genera belonging to the tribe of Chrysogasterini (Diptera, Syrphidae). III. Description of immature stages of some west Palaearctic species. *Revue Suisse de Zoologie* **101**(2): 369-411 French (English sum.)
Biological notes on the developmental stages are included, as well as a key to the identification of the presently known European larvae and puparia of the concerned genera.

Maibach, A.; Goeldlin De Tiefenau, P. & Speight, M.C.D. 1994 Generic limits and taxonomic features of some genera belonging to the tribe of Chrysogasterini (Diptera: Syrphidae). I. Generic diagnosis and description of Riponnensia, gen. nov. *Annales de la Societe Entomologique de France* **30**(2): 217-247 French (English sum.)
A systematic review of the genera *Lejogaster* Rondani, *Chrysogaster* Meigen and *Orthonevra* Macquart is presented, based on both larval and adult criteria. A dichotomous key, providing with the separation of the five genera, both at immature stages and adults, completes this work.

Maibach, A.; Goeldlin De Tiefenau, P. & Speight, M.C.D. 1994 Generic limits and taxonomic features of some genera belonging to the tribe of Chrysogasterini (Diptera: Syrphidae). II. Taxonomic, nomenclatural status of studied species and analysis of the complex *Melanogaster macquarti* (Loew). *Annales de la Societe Entomologique de France* **30**(3): 253-271 French (English sum.)

Makhmoor, H.D. & Malhotra, A.K. 1993 Selective toxicity of some insecticides to the larvae of syrphid, *Episyrphus balteatus* and adults of aphid, *Lipaphis erysimi*. *Indian J.Plant Protection* **21**(2): 157-160

Malec, F. 1994 First record of *Neocnemodon verrucula* (Collin, 1931) (Diptera: Syrphidae) for Germany. *Philippia* **6**(5): 469 German (English sum.)

Marcos-Garcia, M.A. 1993 *Epistrophe* (*Epistrophella*) *euchroma* (Kowarz, 1885), novedad para la Peninsula Iberica (Diptera: Syrphidae) *Bol.-Asoc.-Esp.-Entomol.* **17**(2): 355 Spanish
new records; geographical distribution; Spain; Diptera; Syrphidae

Marcos-Garcia, M. A. & Rojo, S. 1994 *Paragus hyalopteri* n. sp. an aphidophagous hoverfly (Dipt.: Syrphidae) attacking the mealy plum aphid (Hom.: Aphididae). *Entomophaga* **39**(1): 99-106 English (English French sum.)

Morgan, J. 1995 Peter Crow's Merioneth Syrphids (Diptera, Syrphidae) *Dipterist Digest* **1**(2): 51-55

Nakata, T. 1995 Population fluctuations of aphids and their natural enemies on potato in Hokkaido, Japan. *Applied Entomology and Zoology* **30**(1): 129-138
Main predators were *Orius sauteri* (Poppius) (Anthocoridae), *Coccinella septempunctata bruckii* Mulsant (Coccinellidae) and *Harmonia axyridis* (Pallas) (Coccinellidae). The numbers of Chrysophidae, Cecidomyiidae, Syrphidae and other predatory arthropods were relatively small, except for spiders.

Milankov, V.; Vujic, A. & Simic, S. 1995 Species of Xylotini (Diptera: Syrphidae) from the Yugoslav region *Entomol. Gaz.* **46**(3): 209-216
geographical distribution; species composition; Yugoslavia; Diptera; Syrphidae

Niccoli, A. & Fagnani, F. 1994 Observations on the progress of *Myzus varians* (Davidson) infestation in peach orchards in Tuscany. Redia 77(1): 175-187 Italian (English sum.)
Syrphids and coccinellids, the most numerous and effective natural enemies, and the species present during the course of research were identified.

Niehoff, B. & Poehling, H.M. 1995 Population dynamics of aphids and syrphid larvae in winter wheat treated with different rates of pirimicarb. Agriculture Ecosystems & Environment 52(1): 51-55

Paik, J.C. 1994 Hymenopteran parasitoids of Korea (2) *Dendrocerus* (Cerophronoidea, Megaspilidae). *Korean J.Entomology* **24**(3): 225-228 Korean (English sum.)
D. pupparum (Boheman, 1832) is the parasitoid of predatory syrphid fly, *Episyrphus balteatus* (De Geer, 1776).

Palmer, C. 1996 A further record of *Scaeva albomaculata* in Britain and a note on the K.G.Blair collection of British Diptera *Dipterist Digest* **2**(2): 97-99

Plant, C.W. Three hoverflies (Dipt., Syrphidae) new to Hertfordshire, with notes on others. *Entomologist's Monthly Magazine* **130**(1564-1567): 253-254
Chrysogaster virescens New Record; *Platycheirus scambus* New Record; *Cheilosia griseiventris* New Record; Geographic Distribution; England; Uk

Radhakrishnan, B. & Muraleedharan,N. 1993 Bio-ecology of six species of syrphid predators of the tea aphid, *Toxoptera aurantii* (Boyer de Fonscolombe) in southern India. *Entomon* **18**(3-4): 175-180
Studies were carried out on the life history and population dynamics of six species of syrphid predators viz., *Episyrphus balteatus* (De Geer), *Paragus tibialis* (Fallen), *Allobaccha nubilipennis* (Austen), *Betasyrphus serarius* (Wiedemann), *Dideousis aegrota* (Fab) and *Ischiodon scutellaris* (Fab.) feeding On the tea aphid, *Toxoptera aurantii* (Boyer de Fonscolombe).

Rank, N.E. & Smiley, J.T. 1994 Host-plant effects on *Parasyrphus melanderi* (Diptera: Syrphidae) feeding on a willow leaf beetle *Chrysomela aeneicollis* (Coleoptera: Chrysomelidae). *Ecological Entomology* **19**(1): 31-38

Rotheray, G.E. & Perry, I. 1994 The larva of *Callicera spinolae* with a key to the larvae of British *Callicera* species (Diptera, Syrphidae). *Entomologist* **113**(3-4): 205-210

Salveter, R. & Nentwig, W. 1993 Hoverflies (Diptera, Syrphidae) in the agrarian landscape: Phenology, abundance and labeling experiments. *Mitteilungen der Naturforschenden Gesellschaft in Bern* **50**(0): 147-191 German

Schmid, U. 1993 Syrphid flies (Diptera, Syrphidae) from Rosenstein Park in Stuttgart. *Jahreshefte der Gesellschaft fuer Naturkunde in Wuerttemberg* **148**(0): 193-208 German

Schmitz, G. 1994 Spectrum of flower visiting insects on indigenous and neophytic species of *Impatiens*. *Entomologische Nachrichten und Berichte* **38**(1): 17-23 German (English; French sum.)
At least 21 species were observed on *parviflora*, which, however, was mainly visited by Syrphidae.

Singh, D. & Singh, H. 1994 Predatory potentiality of immature stages of lacewing, *Chrysopa* sp., and syrphid, *Episyrphus balteatus* (Degears) over mustard aphid, *Lipaphis erysimi* (Kalt.). *Crop Research (Hisar)* 7(1): 116-119

Sorensen, K.L. & Gilbert, F.S. 1996 The hoverflies (Diptera, Syrphidae) of Bialowieza primeval forest *Dipterist Digest* **2**(2): 92-94

Speight, M.C.D. 1994 Revision of the French fauna Syrphs: II. Microdontidae and Syrphidae Milesiinae (in part.) (Diptera, Syrphidoidea). *Bull. Soc. Entomol. Fr.* **99**(2): 181-190 French (English sum.)

Speight, M.C.D. & Chandler, P.J. 1995 *Paragus constrictus*, *Pteromicra pectorosa* and *Stegana similis*: Insects new to Ireland and *Stegana coleoptrata*, presence in Ireland confirmed (Diptera) *Ir. Nat. J.* **25**(1): 28-31
new records; geographical distribution; Diptera; Ireland; Drosophilidae; Sciomyzidae; Syrphidae

Stubbs, A.E. 1995 Sphaerophoria species B, A hoverfly (Diptera, Syrphidae) previously unrecognised in Britain *Dipterist Digest* **2**(1): 6-7

Stubbs, A.E. 1995 Advances to the British hoverfly list: 1901 to 1990 *Dipterist Digest* **2**(1): 13-23

Stubbs, A.E. 1996 On the major peaks in hoverfly numbers during August 1991 *Dipterist Digest* **2**(2): 82-84

Takada, H. & Sugimoto, N. 1994 Life cycle of *Aphis nerii* B. De F. (Homoptera: Aphididae) in Kyoto, and its natural enemy complex. *Japanese J. of Applied Entomology and Zoology* **38**(2): 91-99 Japanese (English sum.)
Fifteen aphidophagous species composed of Coccinellidae (3 spp.), Syrphidae (4 spp.), Chamaemyiidae (1 sp.), Chrysopidae (3 spp.), Hemerobiidae (1 sp.), Aphidiidae (2 spp.) and Aphelinidae (1 sp.) feed on *A. nerii*.

Tanaka, S. & Ito, Y. 1995 Interrelationships between the eusocial aphid, *Pseudoregma bambucicola*, and its syrphid predator, *Eupeodes confrater* *Jap.J.Entomol.* **63**(1): 221-228
predator prey interactions; *Pseudoregma bambucicola*; *Eupeodes confrater*; Japan ; Homoptera ; Aphididae ; Diptera ; Syrphidae

Tenhumberg, B. 1995 Estimating predatory efficiency of *Episyrphus balteatus* (Diptera: Syrphidae) in cereal fields *Environ. Entomol.* **24**(3): 687-691
predation; cereals; *Episyrphus balteatus*; Syrphidae; Diptera; models; predatory behavior

Tenhumberg, B. & Poehling, H.M. 1995 Syrphids as natural enemies of cereal aphids in Germany: Aspects of their biology and efficacy in different years and regions. *Agriculture Ecosystems & Environment* **52**(1): 39-43

von-der-Dunk, K. 1994 [Syrphids from Bavaria II (Diptera, Syrphidae).]
Entomofauna **15**(5): 49-67 German (English sum.)
Syrphidae; new records; geographical distribution; check lists; Germany; Diptera

Vujic, A. 1994 *Cheilosia balkana* sp. nov., new species of "proxima" group (Diptera, Syrphidae)
Entomofauna **15**(39): 445-454 English (German sum.)
Cheilosia balkana; new species; Syrphidae; Diptera; Serbia; Slovenia; Montenegro

Vujic, A. 1994 [*Cheilosia griseifacies*, a new fly species from Middle Europe (Diptera, Syrphidae).] *Entomofauna* **15**(29): 337-344 German (English sum.)

Vujic, A. & Claussen, C. 1994 *Cheilosia orthotrichia*, spec. nov., a further species of the relationship of *Cheilosia canicularis* from Central Europe (Insecta, Diptera, Syrphidae). *Spixiana* **17**(3): 261-267 German (English sum.)

Vujic, A. & Claussen, C. 1994 *Cheilosia bracusi*, a new hoverfly from the mountains of central and southern Europe (Diptera: Syrphidae). *Bonner Zoologische Beitraege* **45**(2): 137-146 English (German sum.)

Vujic, A.; Radenkovic, S. & Simic, S. 1996 *Merodon albonigrum*, a new european species related to *Merodon geniculatus* Strobl.1909 (Diptera, Syrphidae) *Dipterist Digest* **2**(2): 72-79

Westerbergh, A. & Saura, A. 1994 Gene flow and pollinator behaviour in *Silene dioica* populations. ***Oikos*** **71**(2): 215-224
The pollinator guilds (*Thricops* flies, syrphid flies and bumblebees) are similar in the northern and southern populations and can therefore not account for the difference in gene flow.

Whittington, A.E. 1994 Distribution and conservation of Afrotropical *Graptomyza* Wiedemann, with a new species description (Diptera: Syrphidae: Volucellini). *Biodiversity and Conservation* **3**(8): 716-733

Whittington, A.E. 1994 Descriptions of the puparia of three *Graptomyza* species (Diptera Syrphidae), with comments on probable larval biology. *Tropical Zoology* 7(1): 57-65

Wnuk, A. & Wojciechowicz, E. 1993 Syrphid predators (Diptera, Syrphidae) occurring in the colonies of cabbage aphid, *Brevicoryne brassicae* (L.), on cabbage and cauliflower. *Polskie Pismo Entomologiczne* **62**(1-4): 215-229 Polish (English sum.)

Wratten, S.D.; White, A.J.; Bowie, M.H.; Berry, N.A. & Weigmann, U. 1995 Phenology and ecology of hoverflies (Diptera: Syrphidae) in New Zealand *Environ. Entomol.* **24**(3): 595-600
phenology; population ecology; Syrphidae *Melangyna novaezelandiae*; Diptera; New Zealand

ANNOUNCEMENT: A NEW HOVERFLY NEWSLETTER

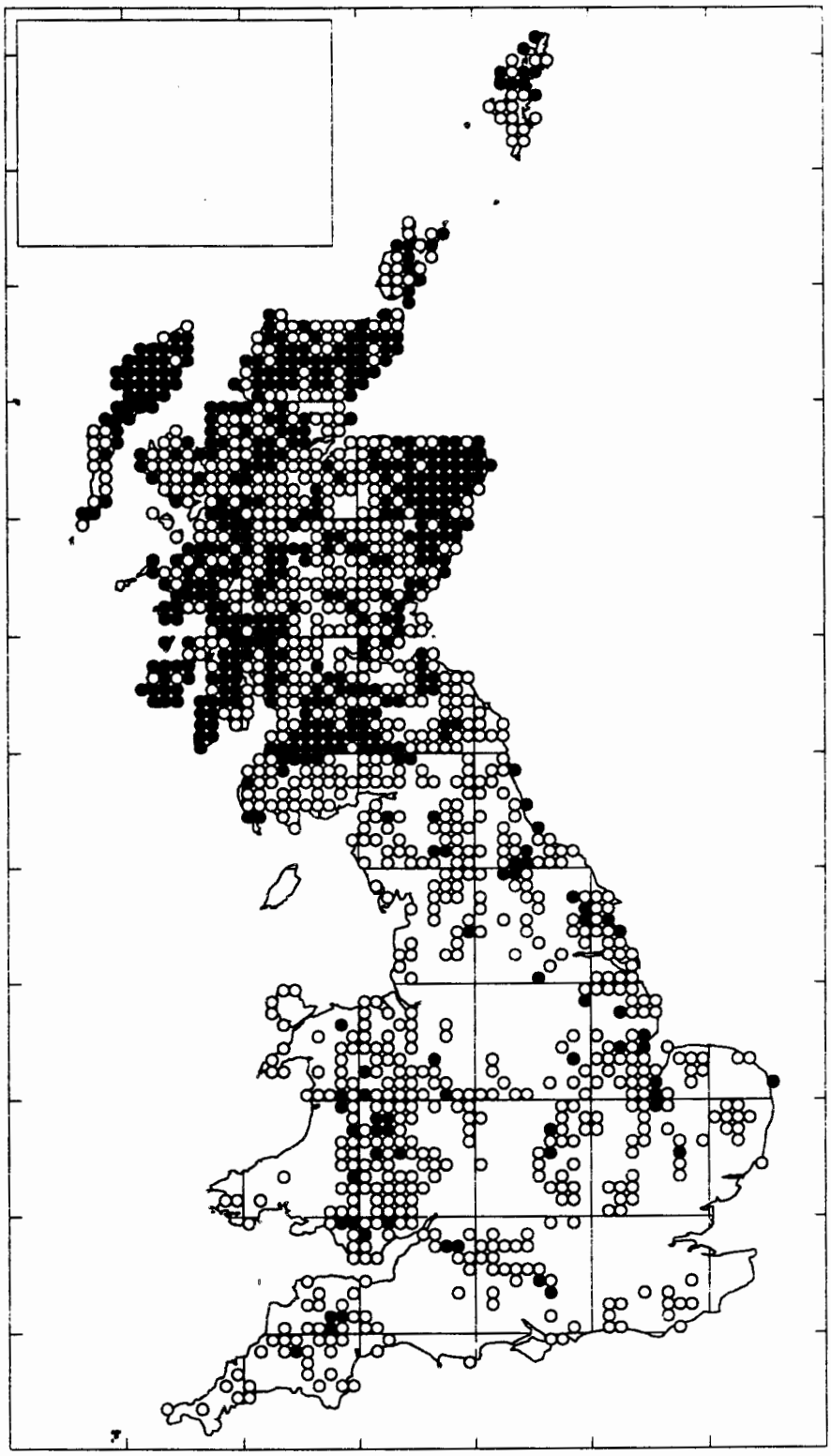
Just before going to press I received news from Martin Drake of a new publication called **Volucella**, a hoverfly journal edited by Ulrich Schmid and Dieter Doczkal in Germany. I shall include fuller details in **Newsletter No. 23**. Meanwhile the Bulletin (issued to forum members with this newsletter) contains further information including details of how to order copies. For those who do not receive the Bulletin, the address for ordering is: Ulrich Schmid, Staatliches Museum für Naturkunde Stuttgart, Rosenstein 1, D-70191 Stuttgart, Germany. The cost (including postage) is DM 25 per year.

Gaps in Hoverfly Recording Scheme coverage

Following requests at Dipterists Day last November, I put a map in the last Hoverfly Newsletter showing 10km squares for which the recording scheme had little or no information. At the time, I promised to update this map with new information submitted as a result of the request for records made at Dipterists Day. Several people have commented on the map and pointed out some problems.:

- at least some squares were shown as poorly records which are actually very well covered. This is undoubtedly correct and I have no idea how it happened.

- there are coastal squares shown as having no records which appear to have no land in them - only tidal mud flats (from which it is hardly surprising that no hoverflies have been recorded).



This map, therefore, includes the 56,500 records we have received since Dipterists Day. It has been replotted from scratch and I hope it is correct this time (at least the squares that were pointed out to me as incorrectly classified are now OK!). I have also excluded squares with less than 10ha of land (according to ITE land cover data).

As before, **filled circles** indicate 10km squares for which the scheme holds no records and **open circles** indicate 'poorly covered' squares from which less than 10 of the 20 commonest species in that part of GB have been recorded.

Stuart Ball