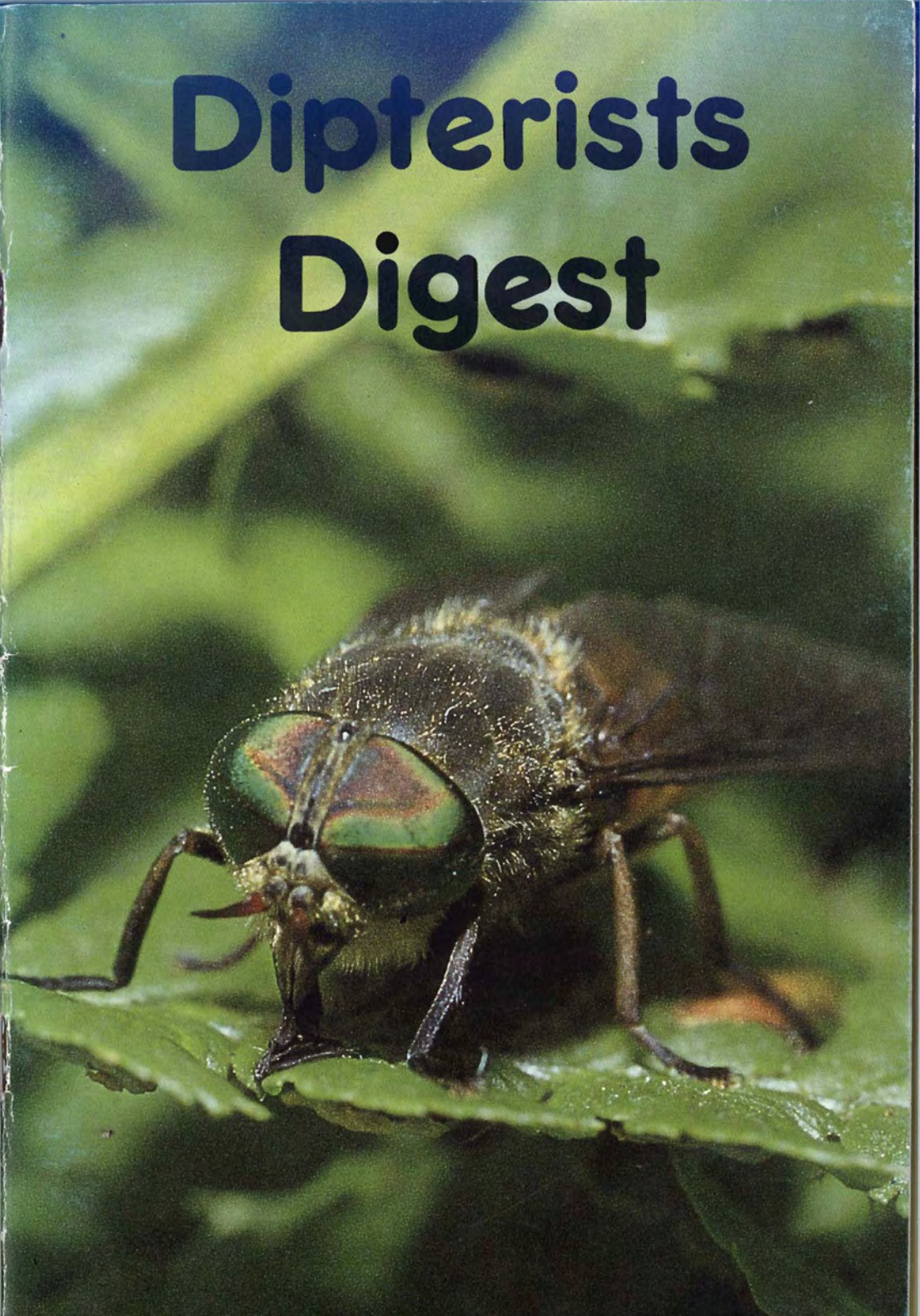
Dipterists Digest



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Contents

DIPTERISTS DIGEST
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17 RUSTLINGS ROAD
SHEFFIELD S11 7AA

A KEY TO W.EUROPEAN PARASYRPHUS SPECIES (SYRPHIDAE)

Martin C.D. Speight

Recently, I mentioned (Speight, 1986) inaccuracies in existing keys, in respect of features used to separate *Parasyrphus nigritarsis* from related species. I also (Speight, 1988) attempted to reduce the difficulty of distinguishing the W. European *Parasyrphus* species in which the markings on each abdominal tergite are in the form of a pair of spots. But I continued to have problems in separating some of the W. European *Parasyrphus* species from one another and so put together a more complete key for my own use. This is presented below in the hope it may help others who have experienced similar *Parasyrphus* problems. The key includes continental species unknown in the British Isles (indicated by an asterisk) except for *P.rellctus* (Zett.), about which I have no more information than is included in Hippa (1968). I remain uncertain whether *P.lineola* and *P.vittiger* are distinct species - I know of no way to distinguish these two from one another which leads to all specimens being satisfactorily assigned. However, I understand their larvae are distinguishable, so, assuming that to be true, it would seem necessary to continue to regard *P.lineola* and *P.vittiger* as separate species. I would be very glad to hear from anyone who can suggest additional characters which may be used for their identification.

The features used in the key to distinguish *P.dryadis* from *P.tarsatus* are derived from Violovitsh (1986). I have avoided use of most of the features used previously to distinguish *P.nigritarsis* and would make the following points about this species: its antennae are not entirely yellow (they are frequently darkened to the extent typical for *P.malinellus*); its face is not entirely yellow (the mouth edge is broadly black) and in the male the hind legs are extensively black (femora two thirds black, tibiae with a black band at the middle, tarsi entirely black). The male of *P.nigritarsis* is, indeed, easy to mistake for *P.malinellus*.

P.nigritarsis may be an under-recorded species. the male hovers very high, at canopy level, and the female rarely descends within reach (females are only captured extremely rarely). The male drops down to rest on ground vegetation beside paths etc., when the sun goes behind a cloud and can also be found resting in the sun on bushes etc., when it is very windy. Mature fen carr of *Salix* and *Populus tremula*, at lake or river margins, provides the right conditions and the species is in flight mid/end May. In my experience, with the exception of *P.annulatus* and *P.punctulatus*, the other *Parasyrphus* species are primarily inhabitants of conifer forest. *P.lineola* and *P.malinellus*, in particular, have very successfully spread into commercial conifer plantations. *P.tarsatus* occurs in more mature *Picea* forest. *P.punctulatus* is as characteristic of certain types of deciduous forest as it is of conifer forest/conifer plantations, while both *P.annulatus* and *P.vittiger* can occur in association with conifers or deciduous trees, but are more frequently found with conifers.

KEY

1. Flat portion of mesopleur immediately posterior to prothoracic spiracle bare ..... **Melangyna and Syrphus**

— --- flat portion of mesopleur immediately posterior to prothoracic spiracle with long, outstanding hairs **2**

2. Abdominal tergites 3 and 4 each with a pair of more or less semicircular yellow spots, narrowly separated in the mid-line **3**

— --- abd. tgs. 3+4 each with a transverse yellow band **6**

3. Hind tibiae entirely yellow, or with a narrow (up to one seventh of the length of the tibia) black ring at middle (eyes thicky hairy; antennae entirely black) **4**

— --- hind tibiae predominantly black **5**

4. Face, just below antennae twice the width of an eye, in anterior view ..... **dryadis** (Holmgren)*

--- face, just below antennae, one and a half times the width of an eye ..... **tarsatus** (Zett.)*

5. Fore and mid tarsi all black; eye hairs in male dense and almost 2x as long as anterior ocellus; vertex in female usually thickly grey-brown dusted and dull over entire surface, including lateral to ocellar triangle (but sometimes only lightly dusted over entire surface), the area of the ocellar triangle being no more heavily dusted than the area lateral to it ..... **macularis** (Zett.)*

— --- fore and mid tarsi usually all greyish-yellow (but may be darker, varying to all-black in occasional specimens); eye hairs in male rather sparce and with few as long as anterior ocellus; vertex in female undusted, shining black, lateral to ocellar triangle, contrasting sharply with surface of ocellar triangle itself, which is grey-brown dusted, dull ..... **punctulatus** (Verrall)

6. Antennae unicolorous black/dark brown **7**

— --- ant. segs. at least partly yellow ventrally **8**

7. Hind legs entirely black, or with apical ends of femora and base of tibiae narrowly and obscurely yellowish/yellow brown ..... **lineola** (Zett.)

--- hind legs with tibiae yellow at both base and apex, the latter sometimes obscurely so and hind femora yellow on about apical sixth ..... **vittiger** (Zett.)

8. Eyes meeting in mid-line, above antennae: male **9**

--- eyes separate: females **11**

9. Hind femora yellow for about apical third; abdominal tergites weakly margined (in some specimens margination hardly visible, in others quite obvious, though incomplete, on abd.tgs. 2-4); eyes bare ..... **nigritarsis** (Zett.)

-- --- hind femora yellow on apical eighth or less; abd.tgs. entirely unmargined; eyes with thinly scattered short hairs **10**

10. Face widening steadily, from above antennae down to level of upper mouth edge; fore and mid tarsi greyish, contrasting with more yellow tibiae ..... **malinellus** (Collin)

-- --- face parallel-sided from mid-way between antennal insertions and facial tubercle down to level of upper mouth edge; fore and mid tarsi all yellow, colour the same as the corresponding tibiae ..... **annulatus** (Zett.)

11. Hind femora yellow except at extreme base; abdominal tergites 2-4 weakly margined (margination difficult to see in some specimens) ..... **nigritarsis** (Zett.)

-- --- hind femora black at least for most of apical half of their length (though yellowish narrowly at apex); abd,tgs, entirely unmargined **12**

12. Hind femora yellow from base for up to one third of their length ..... **annulatus** (Zett.)

--- hind femora black from base almost to apex ..... **malinellus** (Collin)

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Lesser dung flies (Diptera: Sphaeroceridae) in Welsh peatlands

P.R. Holmes, J. Valentine, D.C. Boyce and D.K. Reed

Introduction

The lesser dung flies (Diptera: Sphaeroceridae) are a little studied group of acalypterate Diptera. They have been largely ignored by dipterists in Britain, partly because many species can only be identified by dissection. However the recent publication of an identification handbook by Pitkin (1987) has opened up the group for investigation.

Large numbers of sphaerocerids were collected during fieldwork carried out by the Welsh Peatland Invertebrate Survey (WPIS) (Holmes et al., 1991), a Nature Conservancy Council survey. The survey collected invertebrates from sites all over Wales. The main aims of the survey were to investigate the distribution of peatland invertebrates, and to study the effects of site management on invertebrate communities. Although the survey concentrated on the better studied invertebrate groups (spiders, snails, ground beetles, craneflies etc), it provided a valuable opportunity to look at some of the less well known invertebrate groups.

The distribution of sphaerocerids in peatlands was investigated by Pitkin et al. (1985) from material collected in a study of upland regions of northern England (Coulson & Butterfield, 1979). They recorded 37 species, including two new to Britain, one of which, *Minillmosina baculum*, was new to science.

Methods

The WPIS survey took place from 1987-1989 and covered 300 trapping stations in 118 peatland sites throughout Wales. Each site was studied in one year only. Material was also collected from three additional sites from a pilot study in Cardigan (Ceredigion) in 1986. Pitfall traps were set in each site in June/July and September/October, and water traps were set for 2 week periods in July and September.

All sphaerocerids were identified by J.V., who is keen to receive and identify further sphaerocerid material (in spirit only) from anywhere in Britain. Rare species were checked by Brian Pitkin of the Natural History Museum.

Results and discussion

Pitkin (1987) listed 114 species of Sphaeroceridae known in Britain. WPIS trapped 78 species, of which 5, *Pullimosina dahli*, *Trachyopella bovilla*, *Opalimosina calcarifera*, *Minilimosina tenera* and *M. trogeri*. were new to Britain. However the specimens of *M. trogeri* differ from the description published by Rohácek (1983), and may well prove to represent an undescribed species.

From the notes given in Pitkin (1987), most sphaerocerid species appear to live fairly generally on any decaying organic matter. However for some species we have found trends in distribution. The following notes give information on the vice-county distribution of all the species trapped; there were no sites in Flint, and one site straddled the Denbigh/Shropshire border, so there are some records from Shropshire. The numbers in brackets are the number of sites in which each species was found, and the total number of specimens trapped. Ecological data are also presented for those species where trends were observed. Managed sites were either grazed or burnt (or both). Ombrotrophic sites (bogs) are fed by rainwater only. Poor-fens are acidic (nutrient poor) sites with Sphagnum mosses present, whereas in rich-fens the groundwater is richer in nutrients.

Borborillus costalis (Zetterstedt) (1, 1) - Cardigan

B. nitidifrons (Duda) (4, 8) - Anglesey, Pembroke

B. uncinatus (Duda) (2, 7) - Anglesey, Cardigan

Copromyza equina Fallén (5, 16) - Anglesey, Carmarthen, Pembroke, Radnor

C. similis (Collin) (37, 435) - Anglesey, Brecon, Caernarfon, Cardigan, Carmarthen, Denbigh, Glamorgan, Monmouth, Pembroke, Radnor. There were no records from north-east Wales.

C. stercoraria (Meigen) (100, 1614) - Anglesey, Brecon, Caernarfon, Cardigan, Carmarthen, Denbigh, Glamorgan, Merioneth, Monmouth, Montgomery, Pembroke, Radnor, Shropshire

Crumomyia fimetaria (Meigen) (8, 52) - Anglesey, Denbigh, Glamorgan, Monmouth, Pembroke. Most individuals were caught in reedbeds and other unmanaged rich-fen habitats.

C. nitida (Meigen) (22, 54) - Anglesey, Brecon, Caernarfon, Cardigan, Carmarthen, Denbigh, Glamorgan, Monmouth, Montgomery, Radnor, Shropshire. There were very few records from South Wales.

C. notabilis (Collin) (2, 3) - Glamorgan, Pembroke

C. pedestris (Meigen) (3, 680) - Monmouth, Pembroke. This species was only found in three rich-fen sites in South Wales, but it was common in all three. This is a short-winged species, common amongst tussock sedge (*Carex paniculata* L.) in fens in southern England (Dr. P.J. Chandler, pers. comm.).

Lotophila atra (Meigen) (104, 966) - Anglesey, Brecon, Caernarfon, Cardigan, Carmarthen, Denbigh, Glamorgan, Merioneth, Monmouth, Montgomery, Pembroke, Radnor, Shropshire

Ischiolepta crenata (Meigen) (20, 29) - Anglesey, Brecon, Cardigan, Carmarthen, Denbigh, Glamorgan, Monmouth, Pembroke, Radnor. Pitkin (1987) only listed three sites in Britain for this species. It is clearly widespread in Wales, if at low density.

I. denticulata (Meigen) (4, 7) - Anglesey, Cardigan, Radnor

I. paracrenata (Duda) (21, 105) - Anglesey, Caernarfon, Carmarthen, Denbigh, Glamorgan, Monmouth, Pembroke, Radnor. According to Pitkin (1987) this is a rare species, previously known from mammal and bird nests. Of our specimens, 56% were from unmanaged rich-fen sites.

I. pusilla (Fallén) (29, 128) - Anglesey, Brecon, Caernarfon, Cardigan, Denbigh, Glamorgan, Merioneth, Pembroke, Radnor. There were few records from east Wales.

Sphaerocera curvipes Latreille (8, 14) - Anglesey, Caernarfon, Cardigan, Glamorgan, Merioneth, Pembroke. In the present study it was only found at sites on or close to the south-west and west coast, but J.V. has many records from inland elsewhere in Britain.

Chaetopodella scutellaris (Haliday) (33, 58) - Anglesey, Brecon, Caernarfon, Cardigan, Carmarthen, Denbigh, Glamorgan, Monmouth, Montgomery, Pembroke, Radnor, Shropshire. Widespread in Wales but surprisingly absent from sites on the Lleyn Peninsula. J.V. has found that this species and those of the genus *Coproica* following are easily obtained from traps on fresh manure and hay mixture, suggesting they like nutrient-rich conditions.

Coproica acutangula (Zetterstedt) (9, 33) - Anglesey, Cardigan, Glamorgan, Pembroke, Radnor

C. ferruginata (Stenhammar) (9, 9) - Anglesey, Brecon, Cardigan, Montgomery, Pembroke, Radnor

C. hirticula Collin (1, 1) - Glamorgan

C. hirtula (Rondani) (1, 1) - Pembroke

C. lugubris (Haliday) (12, 49) - Anglesey, Brecon, Carmarthen, Glamorgan, Merioneth, Pembroke, Radnor. Very uncommon in North Wales, only found in single sites in Merioneth and Anglesey.

C. pusio (Zetterstedt) (10, 21) - Anglesey, Carmarthen, Cardigan, Montgomery, Pembroke

C. vagans (Haliday) (4, 5) - Carmarthen, Pembroke, Radnor

Elachisoma aterrimum (Haliday) (5, 6) - Brecon, Glamorgan, Pembroke, Radnor

E. pilosum (Duda) (1, 1) - Glamorgan

Halidayina spinipennis (Haliday) (4, 10) - Anglesey, Caernarfon

Limosina longisetosa (Dahl) (54, 570) - Anglesey, Caernarfon, Cardigan, Denbigh, Merioneth, Montgomery, Pembroke. Described by Pitkin (1987) as rare, but it was fairly common in our survey.

L. plumosula (Rondani) (1, 1) - Pembroke

Leptocera breviceps (Stenhammar) (1, 2) - Anglesey

L. caenosa (Rondani) (7, 22) - Anglesey, Cardigan, Glamorgan, Pembroke

L. cryptochaeta (Duda) (56, 874) - Anglesey, Brecon, Caernarfon, Cardigan, Carmarthen, Denbigh, Glamorgan, Merioneth, Monmouth, Pembroke, Radnor. Common, but only recorded from one site in north-east Wales, and none in the south-east.

L. finalis (Collin) (11, 1389) - Anglesey, Caernarfon, Carmarthen, Denbigh, Merioneth, Monmouth, Radnor. Described as rare by Pitkin (1987), this species is widespread in Wales. 63% of individuals were trapped in managed rich-fen sites.

L. fontinalis (Fallén) (61, 1123) - Anglesey, Caernarfon, Cardigan, Carmarthen, Denbigh, Glamorgan, Merioneth, Monmouth, Montgomery, Pembroke, Radnor. In our study it was found mostly in nutrient rich sites, with 50% of individuals trapped in managed rich-fen,

L. fuscipennis (Haliday) (1, 1) - Glamorgan. 1 individual from a site near the coast.

L. limosa (Fallén) (4, 7) - Anglesey, Cardigan, Pembroke

L. lutosa (Stenhammar) (37, 260) - Anglesey, Caernarfon, Cardigan, Carmarthen, Glamorgan, Merioneth, Monmouth, Pembroke, Radnor, Shropshire. Not recorded at all in central and east North Wales, with the only record from this region at Wem Moss, Shropshire. Largely confined to nutrient rich sites, with 56% of individuals trapped in managed rich-fens.

L. nigra Olivier (30, 135) - Anglesey, Cardigan, Carmarthen, Denbigh, Glamorgan, Merioneth, Monmouth, Pembroke. Uncommon in North Wales. 57% of individuals were trapped on managed fen sites.

Limosina silvatica (Meigen) (3, 3) - Anglesey, Caernarfon, Denbigh

Minilimosina baculum Marshall (9, 21) - Anglesey, Caernarfon, Cardigan, Denbigh, Merioneth. Described as new to science by Pitkin (1987) from material collected in northern England. We found it in a cluster of poor-fen and ombrotrophic bog sites in central West Wales, plus one site on Anglesey.

M. fungicola (Haliday) (17, 52) - Anglesey, Cardigan, Carmarthen, Denbigh, Glamorgan, Merioneth, Pembroke, Radnor

M. gemella Roháček (37, 122) - Anglesey, Brecon, Caernarfon, Cardigan, Carmarthen, Denbigh, Glamorgan, Merioneth, Monmouth, Pembroke, Radnor, Shropshire. Previously

known in Britain only from material collected in northern England (Pitkin et al., 1985), this species is widespread in Wales.

M. v-atrum (Villeneuve) (62, 695) - Anglesey, Brecon, Caernarfon, Cardigan, Carmarthen, Glamorgan, Merioneth, Monmouth, Montgomery, Pembroke, Radnor. Pitkin (1987) implies this species is rare, but we found it to be widespread and common, in a wide range of peatland habitats. However it was largely absent from most of E.Wales, with only a single record in Monmouth. Most were caught in water traps in July.

M. parvula (Stenhammar) (1, 1) - Glamorgan. 1 individual from an upland site (210m).

M. tenera Roháček (1, 1) - Denbigh. 1 individual from an upland mire (300m). New to Britain.

M. trogeri Collin (4, 13) - Caernarfon, Glamorgan, Merioneth. All sites were mires or ombrotrophic bogs. New to Britain.

M. vitripennis (Zetterstedt) (105, 4344) - Anglesey, Brecon, Caernarfon, Cardigan, Carmarthen, Denbigh, Glamorgan, Merioneth, Monmouth, Montgomery, Pembroke, Radnor, Shropshire

Opacifrons coxata (Stenhammar) (116, 13604) - Anglesey, Brecon, Caernarfon, Cardigan, Carmarthen, Denbigh, Glamorgan, Merioneth, Monmouth, Montgomery, Pembroke, Radnor, Shropshire. The commonest species trapped (42% of all sphaerocerids). Almost all specimens were from pitfall traps (cf *O. humida* below).

O. humida (Haliday) (69, 1040) - Anglesey, Brecon, Caernarfon, Cardigan, Carmarthen, Denbigh, Glamorgan, Merioneth, Monmouth, Pembroke, Radnor, Shropshire. 80% of individuals were trapped in nutrient rich sites. Almost all specimens were caught in water traps (cf *O. coxata* above).

Opalimosina calcarifera (Roháček) (1, 1) - Caernarfon. 1 individual from a nutrient poor site at 170m. New to Britain.

O. collini (Richards) (10, 19) - Anglesey, Caernarfon, Cardigan, Denbigh, Glamorgan, Montgomery, Pembroke. Another species with few previous records (Pitkin, 1987).

O. denticulata (Duda) (1, 1) - Anglesey

O. lilliputana (Rondani) (3, 6) - Anglesey, Pembroke

O. mirabilis (Collin) (16, 28) - Anglesey, Brecon, Caernarfon, Cardigan, Denbigh, Glamorgan, Pembroke, Radnor

Pteremis fenestralis (Fallén) (25, 198) - Anglesey, Brecon, Caernarfon, Cardigan, Carmarthen, Denbigh, Glamorgan, Monmouth, Montgomery, Pembroke, Radnor, Shropshire.

Pullimosina dahli (Duda) (30, 158) - Anglesey, Brecon, Caernarfon, Cardigan, Carmarthen, Denbigh, Glamorgan, Merioneth, Montgomery, Radnor. 91% Of individuals came from nutrient poor sites; Rohacek (1983) says it is confined to peat bogs and peat bog meadows (presumably bog refers to ombrotrophic sites). New to Britain.

P. heteroneura (Haliday) (13, 43) - Anglesey, Denbigh, Merioneth, Monmouth, Pembroke

P. moesta (Villeneuve) (23, 453) - Anglesey, Brecon, Caernarfon, Cardigan, Carmarthen, Denbigh, Glamorgan, Merioneth, Pembroke, Radnor. 89% of individuals were trapped in tall fen or reedbeds. There were no records from the north-east quarter of Wales. J.V. has collected this species from water traps on garden refuse, suggesting a preference for nutrient rich habitats.

P. pullula (Zetterstedt) (80, 810) - Anglesey, Brecon, Caernarfon, Cardigan, Carmarthen, Denbigh, Glamorgan, Merioneth, Monmouth, Montgomery, Pembroke, Radnor, Shropshire

Spelobia baezi (Papp) (2, 2) - Anglesey, Denbigh

S. bifrons (Stenhammar) (5, 5) - Anglesey, Brecon, Merioneth, Pembroke

S. cambrica (Richards) (5, 9) - Caernarfon, Cardigan, Merioneth. Our results support the view of Pitkin (1987) that this is a rare species.

S. clunipes (Meigen) (103, 938) - Anglesey, Brecon, Caernarfon, Cardigan, Carmarthen, Denbigh, Glamorgan, Merioneth, Monmouth, Montgomery, Pembroke, Radnor, Shropshire

S. lutellabris (Rondani) (64, 354) - Anglesey, Brecon, Caernarfon, Cardigan, Carmarthen, Denbigh, Glamorgan, Merioneth, Monmouth, Montgomery, Pembroke, Radnor, Shropshire. Few records from the south and west.

S. nana (Rondani) (76, 404) - Anglesey, Brecon, Caernarfon, Cardigan, Carmarthen, Denbigh, Glamorgan, Merioneth, Monmouth, Montgomery, Pembroke, Radnor, Shropshire

S. ochripes(Meigen) (28, 60) - Anglesey, Caernarfon, Cardigan, Carmarthen, Denbigh, Glamorgan, Merioneth, Monmouth, Pembroke, Radnor, Shropshire. Largely western in its distribution in Wales.

S. palmata (Richards) (26, 70) - Anglesey, Caernarfon, Cardigan, Denbigh, Glamorgan, Merioneth, Monmouth, Pembroke, Shropshire. On the survey this species was restricted to coastal and lowland sites, but J.V. has records from many inland sites elsewhere in Britain.

S. rufilabris (Stenhammar) (65, 255) - Anglesey, Brecon, Caernarfon, Cardigan, Carmarthen, Denbigh, Glamorgan, Merioneth, Monmouth, Pembroke, Radnor, Shropshire

S. talparum (Richards) (4, 5) - Carmarthen, Glamorgan, Merioneth, Monmouth

Telomerina flavipes (Meigen) (7, 52) - Anglesey, Caernarfon, Cardigan, Glamorgan, Pembroke

T. pseudoleucoptera (Duda) (13, 25) - Anglesey, Cardigan, Glamorgan, Monmouth, Pembroke

Terrilimosina schmitzi (Duda) (5, 6) - Anglesey, Cardigan, Pembroke

Thoracochaeta brachystoma (Stenhammar) (1, 1) - Cardigan. Described as mainly coastal by Pitkin (1987), but this sites was several miles inland, at 230m.

T. zosterae (Haliday) (1, 1) - Pembroke. 1 individual from a coastal site

Trachyopella bovilla Collin (8, 9) - Anglesey, Cardigan, Caernarfon, Denbigh, Pembroke. Individuals were trapped in a range of habitats: managed and unmanaged heath, poor-fen and rich-fen. New to Britain.

T. coprina (Duda) (1, 1) - Pembroke

T. leucoptera (Haliday) (2, 2) - Brecon, Pembroke

T. lineafrons Spuler (9, 26) - Anglesey, Caernarfon, Cardigan, Monmouth, Pembroke

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We would like to thank Stuart Ball of the N.C.C for producing the computer software to analyse our species data, and for reading and commenting on an earlier draft of the manuscript.

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A note on *Dioctria oelandica* (Linnaeus)(Diptera:Asilidae)

Dr. Neville L. Birkett.

Dioctria oelandica is a species of wide distribution from Westmorland southwards and Scotland (Perthshire). (Oldroyd, H, R.E.S. Handbooks for the Identification of British Insects, IX: Pt.4: 85). The species is often observed in the woodlands of southern Cumbria (VC 69) and my records include Roudsea Wood NNR, woods about Witherslack, Newby Bridge and Arnside Knott.

On 28 June 1990 I took a female species of *Dioctria* in Roudsea Wood NNR which did not readily 'key out' in Oldroyd's Keys. (l.c.) Subsequent investigation at Liverpool Museum resolved the problem. My specimen had the structural characteristics of *D. oelandica* but the wings were pellucid and not of the usual well- known and easily recognised dark brown. At the Museum I was able to consult W.Lundbeck's Diptera Danica Pt.2: 20-21. There, in his discussion of *D. oelandica*, the author states:- "I possess a female specimen of this species with nearly pellucid wings, these being only slightly brownish at the anterior margin." This description fitted my specimen exactly.

The purpose of this note is to enquire as to the frequency of this pellucid form and also to find out if it occurs in the female only? Observations of these points would be of interest.

In this district, VC 69, this specimen is the first of the pellucid form that I have seen. The normally dark-winged form is frequently observed.

The specimen here detailed is now in the Liverpool Museum collection.

I am most grateful to the N.C.C. for permission to visit and collect in Roudsea Wood NNR. Also thanks are extended to Stephen Judd and Tom Mawdesly of the Liverpool Museum for their help in the matter.

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Records of three uncommon Diptera in 'Westmorland', (VC 69).

Neville L. Birkett

Rhondaniella dimidiata (Meigen, 1804) (Mycetophilidae).

A female of this species was taken when sweeping low vegetation in Roudsea Wood N.N.R. on 4 November 1987. Edwards (1924) notes the species as 'rare'. Kidd, L.N. and A. Brindle (1959) do not record the species from Lancashire or Cheshire - and at the time of their publication Roudsea Wood was in Lancashire.

Paykullia maculata (Fallen, 1820) (Rhinophoridae). A small fly behaving in rather curious fashion while it flew up the inside of my study window in Grange-over-Sands attracted my attention. It had a peculiar intermittent fluttering of the wings as it ascended the glass. I tubed and mounted the specimen which subsequently proved to be a female *P. maculata*. The specimen was taken on 13 July 1989. Van Emden (1954) notes this species as generally distributed but rare. The larvae of Rhinophoridae are, in the main, parasitic on Isopoda - woodlice in particular - though a few other hosts have been recorded, such as egg-cocoons of spiders.

Myopa testacea (Linnaeus, 1795) (Conopidae) A male specimen of this species was taken at my previous home, Kendal Wood, New Hutton, Cumbria on 18 May 1987. The fly flew in through an open door and then tried to regain the outside world through a large window. This species appears not to have been previously recorded from Westmorland, (VC 69). Smith (1959) gives a distribution map for the species which does not include Westmorland, nor is the county mentioned in his later paper, Smith (1969).

I am grateful to the N.C.C. for granting me collecting facilities in Roudsea Wood NNR.

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Syrphidae in the Northern Isles

B.R. Laurence

The record of *Metasyrphus* (=*Eupeodes*) *lundbecki* Soot-Ryen from Fair Isle, half way between Shetland and Orkney (Watt & Robertson, 1990, *Dipterists Digest*, 6: 23) led me to re-examine a specimen captured on a stunted sycamore tree at Bridge of Walls in 1985 (July 10) on the west mainland of Shetland and then determined as *Scaeva selenitica* Mg. The specimen is, however, the latter species. By coincidence, a single specimen of *S.pyrastri* L. was captured in the same locality in July 1982 and neither species has been seen by me since, either in Orkney or in Shetland. These specimens, both female, support the suggestion that migratory hoverflies (as well as birds such as the great spotted woodpecker) arrive unexpectedly on these bare and virtually treeless northern islands.

This appears to be a good opportunity to list the syrphids that regularly appear in suitable habitats in the Northern Isles, from Orkney in the south (from 58°46'N) up to Unst in Shetland (60°50'N), the most northerly island in the British Isles. The islands are so small that it is difficult to see if species are marked on maps in the Diptera Recording Scheme and the islands are often transposed in position to somewhere east of the Moray Firth. The main nectar sources on the islands are umbelliferae (*Angelica*, *Anthriscus* and *Heracleum*), dandelions (*Taraxacum*), buttercups (*Ranunculus*) and daisies (*Bellis*), in this order of importance, and which flower especially along the ungrazed roadside verges.

Species recorded in Orkney and Shetland, up to Unst:

Chrysogaster hirtella Loew, *Eristalis arbustorum* L., *E.intricarius* L., *Helophilus pendulus* L., *Lejogaster metallina* Fab., *Platycheirus manicatus* Mg., *P.peltatus* Mg., *Rhingia campestris* Mg., *Sericomyla silentis* Harr.

These species have appeared in earlier lists of syrphids from the islands. Other species have been found in Orkney since 1981 but only on the southern mainland of Shetland (60°10'N):

Episyrphus balteatus Deg., *Eristalis abusivus* Collin, *E.pertinax* Scop., *Metasyrphus corollae* Fab., *Neoascia tenur* Harr./ *geniculata* Mg., *Platycheirus albimanus* Fab., *Syritta pipiens* L.

The following species have been found only in the Orkney Islands, including the smaller islands, but not in Shetland:

Cheilosia fraterna Mg., *Eristalis tenax* L., *Leucozona lucorum* L., *Melanostoma mellinum* L., *Neoascia podagrica* Fab.

Other species have been found on single occasions and some of these might also be migrants into the islands:

Shetland: *Syphus torvus* Osten-Sacken, Hillwell, South Mainland, July 1982.

Orkney: *Anasimyia lineata* Fab., Shapinsay, July 7, 1985; *Melanostoma scalare* Fab., Orphir, light trap (I. Lorimer), August 26, 1988; *Platycheirus clypeatus* Mg., Eday, May 30 and June 3, 1988; *P.scutatus* Mg., Eday, May 30, 1988.

No doubt some species have been overlooked. Burbridge, Owen & Fowler (1988, *Entomologists mon. Mag.*, 124: 44), for instance, found *Platycheirus clypeatus* also in Shetland, and Carpenter (1950, *Entomologist's mon. Mag.*, 86: 268) apparently found *Eristalis horticola* Deg. there also. The majority of my small *Eristalis* are *E.arbustorum* , and the rest are referable to *E.abusivus*, which is also recorded in a list of 16 species of hoverfly in Berry (1985, *The Natural History of Orkney*. Collins, London). This list includes *Cheilosia bergenstammi* Beck. and *C.illustrata* Harr., which I have not seen. Earlier records are given in Dale (1893, *Entomologist's mon. Mag.*, 29: 93) with the addition of *Cheilosia flavimana* Mg. = *albitarsis* Mg. and *Eristalis nemorum* L., from Shetland, and by Grimshaw (1905, *Ann. Scot. nat. Hist.*, 1905: 22) for both Orkney and Shetland, who identified *Cheilosia illustrata*., *Platycheirus angustatus* Zett., " *Ascia floralis* Mg.", *Sphaerophoria menthastri* L., *Syrphus ribesii* L., *S.vitripennis* Mg., *Volucella bombylans* L., and *V.pellucens* L. from Orkney. Grimshaw queried earlier records of *E.nemorum* and *Sericomyia lappona* L.

Notable genera so far absent are *Baccha*, *Brachyopa*, *Chrysotoxum*, *Criorhina*, *Eumerus*, *Ferdinandea*, *Merodon*, *Pipiza*, *Pyrophaena*, *Xanthogramma* and *Xylota*. There is a notable absence of trees on the islands although there are a few plantations in sheltered places on the mainlands of Shetland and Orkney, and on Hoy, and mature trees can be found in the shelter of the towns. Elsewhere, the islands are very exposed and some of the smaller islands are very low-lying and wind- swept. Compared to the fauna of Iceland (Nielsen, Ringdahl & Tuxen, 1954, *The Zoology of Iceland* v. 3, E. Munkgaard, Copenhagen), there are relatively few species of *Syrphus sensu lato* and apparently no *Pyrophaena*. This may reflect the relative exposure of the smaller British islands. But more genera and species may yet be found.

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Phytosciara (Prosciara) producta Tuomikoski (Diptera: Sciaridae) new to the British Isles

Patrick Ashe and James P. O'Connor

During recent work on Irish sciarids, we discovered a male specimen which partially keyed out in Freeman (1983) to *Phytosciara (Prosciara) ungulata* (Winnertz). It however differed from that species in possessing hairs on wing vein CuA_2. Upon consulting Tuomikoski (1960), it was evident that it belonged to *P.producta* Tuomikoski, a species new to the British Isles. It was swept by one of us (JPO'C) at Killoughrim Forest, Co. Wexford (S9041) on 4 June 1987. This is a relict of the ancient oak forests which once covered Ireland and is a site of scientific importance. The specimen has been presented to the National Museum of Ireland.

The two species of *Phytosciara (Prosciara)* now known to occur in the British Isles can be readily separated using the following couplet:

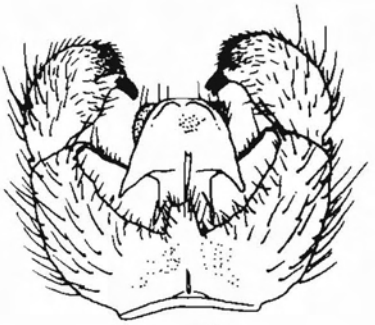
1a. CuA_2 with macrotrichia; flagellar segments of antenna completely or mainly reddish yellow; genitalia as in Fig. 1.

..... **producta** Tuomikoski

1b. CuA_2 bare; flagellar segments of antenna dark; genitalia as in Fig. 2.

..... **ungulata** (Winnertz)

1



2

Additional features (see Freeman, 1983, fig.6) which may be of diagnostic importance in separating the two species are:

1. the length of the genital apodeme
2. the cerci extending well beyond the tegmen in *producta* but not, or only slightly, extending beyond the tegmen in *ungulata*.

Previously this species was only known from Finland and Roumania (Gerbachevskaja-Pavluchenko, 1986). The genitalia figures are redrawn from Tuomikoski (1960) with some modification to the figure of *producta*.

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Winter activity in the Common Window Gnat, Sylvicola cinctus (Fabr.) (Diptera, Anisopodidae)

E.G. Hancock

The results of operating a treacle trap throughout the winter months of November, 1984 to March 1985 are analysed for the activity of adult flies of the anisopodid *Sylvicola cinctus* (Fabr.). This is shown by the numbers caught in relation to maximum and minimum temperatures at the site. The observations were made in a suburban garden in Bolton, Lancashire.

Method

The trap is based on the technique used by Pratt & Pratt (1980), in turn derived from similar earlier methods of trapping Coleoptera and Lepidoptera of economic importance. The use of molasses (= black treacle in English terminology) as a bait in a diluted state, which then ferments, was used successfully to record the distribution of several of the Nearctic species of window gnat and a means of obtaining live *Sylvicola alternatus* (Say) which were used for rearing experiments.

The trap itself is a plastic soft drinks container with a hole cut in the side containing black treacle diluted with water (about 1:4, treacle:water) which is then suspended from the branch of a tree or similar. Depending on the situation it would be necessary to position it to avoid the attentions of livestock. I have also found it useful to hang it so that the opening is facing slightly downwards which prevents the container filling with water when it is raining, a necessary precaution in the British climate. To assist with this it is best to select a container with a jug type handle near the neck which usually produces the right angle.

The difference between this and earlier uses of the technique is that the trap was continued during the winter months and the results were linked to air temperature. Fermentation of the mixture was minimal and the odour alone appeared to be sufficient to attract the flies. The mixture was changed twice during the period.

Results

The graph (Fig. 1) shows the number of adult flies found trapped in the bait over periods of from one to seven days according to the intervals at which the trap was inspected. Where no bar appears then no flies were found after daily examination. The principal correlation between the activity of the flies, as shown by their appearance in the treacle trap, is the minimum daytime temperature of 8°C. There are three periods when flies were caught (1st January, 29th January - 6th February and subsequent to 22nd February, indicated by asterisks on Figure 1.) immediately following a colder period. This was irrespective of the minimum night temperatures which were as low as

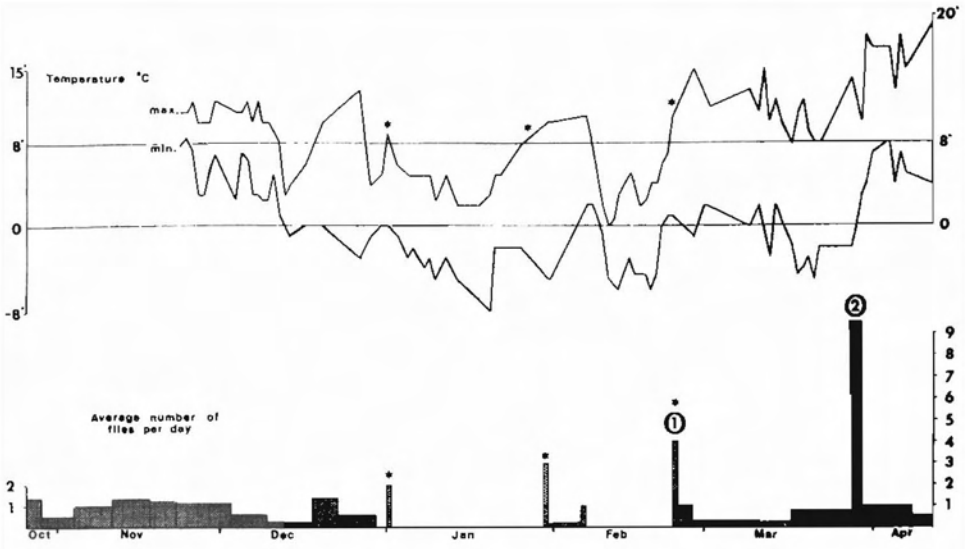

Figure 1 : Adult *Sylvicola cinctus* (Fabr.) numbers from a treacle trap during the winter of 1984-5 in Bolton, Lancashire

-8°C. When this was first seen to occur then observations were also made of the behaviour of the flies. On several occasions they were observed to fly into the trap. Normally they settled on the edge of the plastic rim before walking on to the surface of the liquid. Because the treacle is diluted not only the stickiness but low surface tension causes them to sink fairly rapidly. At this stage the individual flies can be rescued and washed and recover sufficiently to mate and lay eggs in captivity.

The correlation between the temperature and flying activity was marked. On 22nd February, when the temperature was 7°C only Trichoceridae (Winter Gnats) were seen in the garden but the next day the temperature rose to 8°C at 2.00 pm and an adult *Sylvicola cinctus* was then seen. Later in the afternoon it rose to 10°C and subsequently four individuals were trapped (marked no. 1 in figure). Not all flies seen were caught by the trap. No separate record was made of the numbers seen to fly around the treacle but escape without being trapped. Other species of insect were also attracted by the treacle bait. Most numerous were calyptrates, principally *Calliphora vicina*, drosophilids, and several other nematocerous and acalyptrate families amongst the Diptera and small numbers of Psocoptera, Hymenoptera (Parasitica) and Coleoptera. Of these only the drosophilids continued to appear as regulars after the end of December. They have not been identified or quantified separately.

Discussion

Sylvicola cinctus is the most common of the British anisopodids of the group whose eggs are laid in rotting animal or vegetable matter, usually excluding the dung of herbivorous mammals, a niche which is occupied by *S.punctatus* (Fabr.). *S.cinctus* has only recently been identified from carrion (Hancock, 1990).

S.fenestralis (Scop.) is generally quoted in older literature as the commoner of these two species but this does not seem to be the case in the north of the British Isles. The results to date of the Cranefly Recording Scheme, in which this family are included, also indicate fewer recorded observations at a national level (Alan Stubbs, pers. comm.). As well as sharing habitats such as sap runs with *S.cinctus* it has long been implicated in association with rotting animal tissue but some of these may be based on misidentifications, especially when based on larvae only. For a brief discussion of this problem see Hancock (1990, 1991).

The fourth species occurring in this country is *S.zetterstedti* (Edwards). At present its larvae are only recorded from the roots of Cow Parsley and Angelica. I have recently had the opportunity to observe females laying eggs on growing stems of these umbellifers from which the larvae invade the living tissue by penetrating the leaf bases. This demonstrates quite a different life style from the others in this group.

It should be noted that the genus *Mycetobia* after a turbulent taxonomic history is now proposed as occupying a family of its own (see Mamaev, 1968, for example) although this has not been adopted in British literature or checklists to date.

In summarising the known habits of the species of *Sylvicola* the general ecological type can be seen within the family. Apart from the association of *zetterstedti* with specific flowering plants they are r-selected species (Matthews & Kitching, 1984). They have short generation time, are of small size and have high levels of dispersal and fecundity. They are opportunists which quickly colonise newly available foodstuffs by reason of their catholic taste for animal or plant material suffering from bacterial or fungal decay. To succeed in this lifestyle, for which there is much competition, then such insects must be ready to lay eggs as soon as food presents itself. There would appear to be a clear advantage to a fly that can remain active in cold weather during which time organic debris is accumulating but not being colonised as quickly as at higher temperatures. It is probably no coincidence that the most frequent flies accompanying the window gnats in the treacle trap were drosophilids. This sharing of a habitat has already been observed in a study of fallen fruit in sub-tropical eastern Australia (Atkinson, 1985).

Both males and females were trapped although mating was not observed to take place during the period. No teneral individuals were seen and it is thought that the adults were hibernating nearby. The speed with which they appeared in the trap when the temperature reached 8°C would seem to preclude the possibility that they were emerging from pupae at a breeding site, although it is possible a lower temperature triggered the emergence of adults which then become active only on it rising to 8°C.

The large numbers of *S.cinctus* trapped on 29th March (marked no.2 in figure), in which there were 17 males and 2 females, are interpreted as a possible spring emergence. This would give some support to the idea that the earlier captures were of hibernating individuals. A considerable period of temperatures above zero preceded this event during which only small numbers were trapped.

What was the attraction of the treacle bait to the flies? As it was not fermenting it was probably not presenting itself as an oviposition site and so the odour alone was probably responsible. The proportion of males to females changed considerably before and after the first frost on 14th December. Until then females outnumbered males by almost two to one (30:17) but afterwards there were only 4 females to 18 males. Females may have a lower tolerance to these temperatures and die off more quickly although this would seem to be contrary to the winter strategy conjectured above. Perhaps this depletion of females was due to their having laid eggs before the onset of frost for which there would then be no selective pressure to survive.

This experiment has been analysed only for the presence of one species of fly. The technique could be adapted or extended for others.There appears to be little published literature on the subject of the ability of dipterans to survive winter in adulthood.

Summary

Sylvicola cinctus appears to have a duel strategy for cold weather survival. As well as larvae overwintering within the selected foodstuff some adults appear to hibernate.

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VARIATION IN THE NUMBER OF PECTEN SPINES AND COMB SCALES IN Aedes cantans (MEIGEN) AND Aedes punctor (KIRBY)

Keith R. Snow

Little information exists on morphological variation of British mosquito species, although ranges of the number of certain body setae, pecten spines and comb scales are given by Marshall (1938). Recently published keys to British culicids use the numbers of both pecten spines and comb scales to separate certain species. However the variation of these and other characters within a population and within a species geographically is poorly understood.

In order to investigate the numbers of pecten spines and comb scales in the two woodland mosquitoes *Ae. cantans* and *Ae. punctor*, collections of fourth instar larvae were made during April 1989 from temporary pools in five sites in Epping Forest, Essex.

Site	Map Reference
1 - Chingford Plain	51 400944
2 - High Beech	51 410985
3 - "Robin Hood"	51 412969
4 - "City Limits"	51 424993
5 - Lower Forest	51 474035

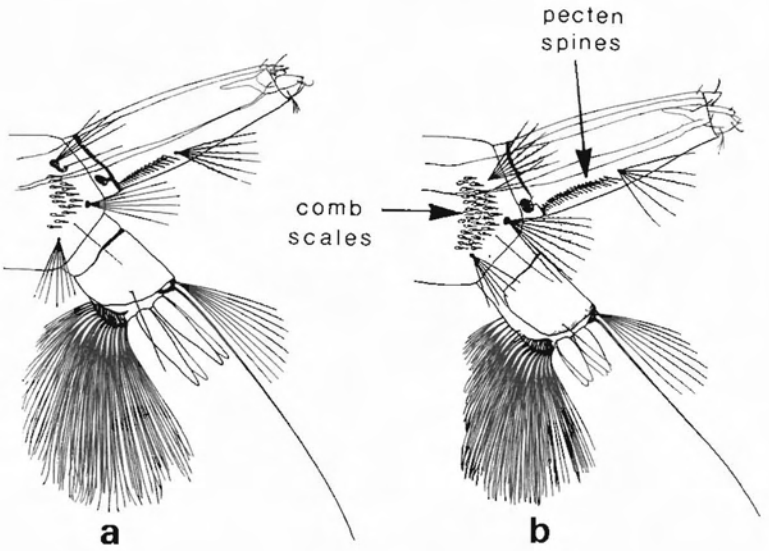

Figure 1. Terminal segments of 4th instar larvae of (a) *Aedes punctor* and (b) *Aedes cantans*.

TABLE 1 Means, standard deviations and ranges of pecten spines and comb scales for one hundred 4th instar *Aedes cantans* larvae from each of five sites in Epping Forest

	Pecten spines		*Comb Scales*
Site 1	22.6 ± 2.9 (16-39)	Site 1	32.9 ± 3.8 (23-44)
Site 2	27.1 ± 3.7 (23-37)	Site 2	27.4 ± 3.8 (22-45)
Site 3	25.6 ± 3.1 (22-38)	Site 3	36.2 ± 3.9 (26-43)
Site 4	24.4 ± 3.3 (21-37)	Site 4	34.7 ± 3.7 (23-43)
Site 5	26.1 ± 3.1 (19-37)	Site 5	33.6 ± 3.9 (24-44)

TABLE 2 Means, standard deviations and ranges of pecten spines and comb scales for one hundred 4th instar *Aedes punctor* larvae from each of five sites in Epping Forest

	Pecten spines		*Comb scales*
Site 1	16.0 ± 2.0 (11-20)	Site 1	14.0 ± 3.7 (8-26)
Site 2	16.2 ± 2.1 (12-20)	Site 2	14.7 ± 3.6 (8-29)
Site 3	16.8 ± 2.1 (12-23)	Site 3	14.7 ± 3.2 (8-25)
Site 4	16.5 ± 2.1 (11-20)	Site 4	14.3 ± 3.8 (8-26)
Site 5	16.3 ± 2.2 (12-21)	Site 5	14.8 ± 3.1 (8-24)

Fourth instar larvae, preserved in 70% alcohol, were identified using the keys of Cranston *et al.* (1987) and batches of 200 of each species from all five sites were prepared for examination. This entailed removal of the terminal segments, mounting these in polyvinyl lactophenol and viewing at x400 magnification. The characteristics of the terminal segments, including the comb scales and pecten spines, of the two species are shown in Figure 1. The number of pecten spines and comb scale on either both or one side of one hundred specimens of each species were counted, the identification of each being confirmed.

For *Ae. cantans* the overall range of comb scales was 22-45 (mean 33.0) and of pecten spines 16-39 (mean 25.2) (Table 1). The corresponding figures for *Ae. punctor* were 8-29 (mean 14.5) and 11-23 (mean 16.4) (Table 2). Only small variations were observed between the comb scales and pecten spines from the two sides of the body (Table 3). There were no significant differences between the comb scale and pecten spine numbers of larvae from the five sites.

The ranges recorded in the present study were in agreement with those given by Marshall (1938) (Table 4). The sample sizes were undoubtedly larger than those used by Marshall and this in itself explains the recordings of individuals at the extremes of the ranges.

The study shows the importance of using large samples to prevent restricted, and hence inaccurate, ranges from being quoted.

TABLE 3 **Means, standard deviations and ranges of both sets of pecten spines and comb scales for one hundred 4th instar larvae**

Aedes cantans	*Side 1*	*Side 2*
Pecten spines	22.6± 2.9 (16-39)	21.9 ± 3.1 (16-38)
Comb scales	32.9 ± 3.8 (23-44)	31.6 ± 3.6 (22-44)
Aedes punctor		
Pecten spines	16.2 ± 2.1 (12-20)	16.8 ± 2.2 (11-23)
Comb scales	14.7 ± 3.6 (8-29)	14.7 ± 3.5 (8-25)

TABLE 4 **Ranges of pecten spines and comb scales for 4th instar larvae of *Aedes cantans* and *Aedes punctor* determined by Marshall (1938)**

	Pecten spines	*Comb scales*
Aedes cantans	21-30	28-38
Aedes punctor	15-18	11-24

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Scenopinus niger Degeer (Scenopinidae) in Montgomeryshire

While searching through red-rotten heartwood exposed in the side of a fallen oak hulk in the ancient deer park of Powis Castle (SJ216064), near Welshpool, 9th June 1990, I found a single *Scenopinus niger*. It keyed out very readily using Oldroyd (1969, **R.E.S.L. Handbook, 9 (4)**, p.106), and I have also checked it through Kelsey (1969, A Revision of the Scenopinidae of the World, **Bulletin 277 of the Smithsonian Institution, United States National Museum**). Kelsey (loc.cit.) comments that very little is known of the biology of this family, but that the larvae are predacious on other insects. It will be of interest, therefore, to note the other insect species present amongst the red-rotten timber. Three species of beetle were found: the dermestid *Cteslas serra*, and the anobiids *Dorcatoma chrysomelina* and *Xestobium rufovillosum*, all of which undoubtedly were breeding in the trunk.

I would like to record my thanks to Dr Roger Key for arranging access to Powis Castle Deer Park, and to Dr Martin Drake for the loan of his copy of Kelsey.

Keith N.A. Alexander

Some Hoverflies (Diptera; Syrphidae) of Rhum National Nature Reserve, Western Scotland.

N.O.M. Ravenscroft , C.G.N. Faulkner, J.R. Oxley, C.J. Pumphrey, L.M. Rogers and J.L. Thomas.

Introduction

From July 3rd-8th 1989 a party of students, led by a member of staff from the University of Aberdeen, visited the Isle of Rhum National Nature Reserve. The party was on a tour of the island organised by the Nature Conservancy Council and was asked to undertake a survey of hoverflies (Diptera, Syrphidae). This was decided because of the paucity of recent knowledge for the island and the familiarity of one member of the party (N.O.M.R.) with the group.

The Isle of Rhum is one of the Inner Hebrides, lying 12km south- west of Skye and is one of Britain's largest National Nature Reserve (10,794 ha). It is a mountainous island, the interior dominated by several peaks of over 500m, and low-lying ground is generally confined to a few large glens and the coast. These areas have been extensively deforested over the past 2,500 years and nowadays wet heaths and blanket bogs cover a large proportion of the land surface (Ball 1987). Efforts are being made to re- establish woodland on certain parts of the island. Herb-rich grassland and heaths occupy small areas of the glens and coastal cliffs.

Previous records of hoverflies are listed by Wormell (1982) and comprise 54 species, at the time about 21% of the British fauna. This list was compiled from records mainly occurring in the 1960's and the last record was made in 1969. It thus seemed highly appropriate that an effort should be made to compile and compare a species list after such a long absence of recording.

Methods

The study focused on a large meadow behind Kinloch at the head of Loch Scresort (Glen Park, NM 399999) with brief visits to adjacent woodland (NM 400997), Harris (NM 339962), Fionchra (NG 339005) and Bloodstone Hill (NG 315006). Two days were spent on intensive recording in Glen Park (5th and 6th), specimens being caught on random walks throughout the meadow. On the 6th, 12 transects (each 30m apart and ca. 350m in length) were also conducted in an attempt to map the distribution of species and record their relative abundance and flower preferences. The results from these were disappointing as hoverflies were noticeably less abundant on the 6th and no species were added to the list through this exercise. Specimens were identified using the key in Stubbs and Falk (1983, 1986). Throughout the stay on the island the weather

was fine, and temperatures high, with almost uninterrupted sunshine, cloudy only in the morning of the 5th.

Results and Discussion

Glen Park is a gently sloping south facing meadow about 25ha in extent. The uppermost reaches are dry and sparsely vegetated with outcrops of rock. The meadow then grades through areas of meadowsweet *Filipendula ulmaria* and tussocks of *Juncus effusus* to lush vegetation growing in the wetter ground towards the bottom of the meadow. These areas are dominated by *J. effusus* and *J. articulatus*, with abundant tormentil *Potentilla erecta*, buttercups (*Ranunculus acris* and *R. flammea*) and ragged robin *Lychnis flos-cuculi*. A band of vegetation across the middle of the meadow remains short and heavily grazed, dominated by daisy *Bellis perennis*, following previous management experiments. The adjacent woodland was planted ca.80 years ago and consists mainly of exotic conifers although some native scrub grows amongst the clearings searched for hoverflies.

31 species were found, 22 of which were previously recorded in Wormell's list (41%), leaving 9 new to the island. 28 species were recorded from Glen Park. *Platycheirus* sp. and *Melanostoma* sp. were particularly abundant in the lush *Juncus* vegetation at the base of the meadow, flying low in the vegetation or found at the flowers of *P. erecta* or *Ranunculus*. Records of *Cheilosia albitarsis* and *Chrysogaster hirtella* were also confined to the more marshy areas and frequented the same flowers. The distributions of *Helophilus pendulus* and, to a lesser extent, *Metasyrphus corollae* were markedly different, tending to occur in more tussocky vegetation with patches of short turf towards the top of the meadow. Other species that occurred in abundance such as *Episyrphus balteatus*, *Sericomyia silentis* and *Syrphus* sp. were much more widely distributed, although most were found feeding on *Ranunculus* and *P. erecta*. Of records new to the island, all bar one were located in Glen Park (Table). *M. corollae* was recorded in such abundance that its absence from the previous lists is somewhat surprising.

A few species were found in both Glen Park and the woodland (*P. manicatus*, *P.spA*, *H. pendulus* and *S. silentis*) whilst two (*Eristalis nemorum* and *Volucella pellucens*) were confined to this habitat (the latter also within regenerating woodland plots at Harris). *M. mellinum* was also recorded from the slopes of Fionchra at ca. 350m altitude and *S. silentis* from the cliff-top of Bloodstone Hill (ca. 400m). The remaining new record, *P. melanopsis*, was found on the top of Fionchra (ca. 410m) flying very close to the ground (<10cm) and frequenting creeping *P. erecta*. *P. melanopsis* is listed in the Red Data Book on insects (Shirt 1987) under category 3 (rare: known from <15 10km squares) and is thus an important record. Three other species (*P. podagratus*, *P. scambus* and *E. rupium*) are listed as "noteable" by Falk (1985), recorded from fewer than 100 10km squares.

The greatest diversity of species (and most of the new records) was obtained in the morning of July 5th, the only overcast but warm period. Records for the remainder of the 5th and the 6th in Glen Park, made in uninterrupted sunshine and high temperatures, were mostly confined to the more abundant species previously noted.

That over 40% of the known list and 9 new species were recorded suggests much may remain to be discovered about the hoverflies of Rhum N.N.R.. Much may have changed in the last 20 years. The previous surveys and this work have also tended to concentrate on Kinloch Glen and its surrounds. Future surveys might focus on other areas such as the isolated coastal herb-rich heathlands at Harris and Kilmory and the successful plots of regenerating woodland about the island.

Acknowledgements

This paper is dedicated to our memory of Wilf Nelson, warden of Rhum N.N.R., tragically killed on the island in September 1989. He affected us all with his enthusiasm and was thrilled by the results of this work.

Many thanks are due to Ken Watt of the University of Aberdeen for the verification and identification of certain records and to Dr. Mark Young for comments on the manuscript.

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Table: The species recorded from Rhum N.N.R. 4th–7th July 1989.

	Species	Dates	Location
	Melanostoma mellinum	5th & 6th	A,E
	M. scalare	6th	A
	Platycheirus albimanus	5th	A
	P. clypeatus	5th & 6th	A
	P. manicatus	6th	A,B
*	*P. melanopsis*	7th	E
	P. peltatus	5th	A
*	*P. podagratus*	5th & 6th	A
	P. scambus	5th & 6th	A
*	*P. sp. A.*	5th & 6th	A,B
	Pyrophaena granditarsa	6th	A
*	*P. rosarum*	5th	A
*	*Pipiza noctiluca*	5th	A
	Chrysotoxum bicinctum	5th & 6th	A
*	*Dasysyrphus lunulatus*	5th	A
	Episyrphus balteatus	5th & 6th	A
*	*Metasyrphus corollae*	5th & 6th	A
	Sphaerophoria menthastri	6th	A
*	*S. philanthus*	6th	A
	Syrphus ribesii	6th	A
*	*S. torvus*	5th	A
	S. vitripennis	5th	A
	Cheilosia albitarsis	6th	A
	Rhingia campestris	5th	A
	Chrysogaster hirtella	5th & 6th	A
	Eristalis nemorum	6th	B
	E. rupium	6th	A
	Helophilus pendulus	5th & 6th	A,B
	Sericomyia lappona	5th	A
	S. silentis	5th, 6th & 7th	A,B,D
	Volucella pellucens	4th & 6th	C,B

* denotes new record for the Isle of Rhum, A = Glen Park, B = Kinloch woodland, C = Harris, D = Bloodstone Hill & E = Fionchra.

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Ten Species of Sciaridae (Diptera) New to Ireland

J.P. O'Connor and P. Ashe

During recent work on the Irish sciarid fauna, the following species new to Ireland were recorded. All the specimens are males and were identified using Freeman (1983, 1987, 1990). Voucher material has been deposited in the National Museum of Ireland. The following abbreviations have been used:- PA = P. Ashe; JPOC = J.P. O'Connor; JMOC = J.P. and M.A. O'Connor.

Bradysia fimbricauda Tuomikoski
WICKLOW: Glendalough (T1196), 24 April 1989, JMOC.
Swept from lakeside vegetation.

B.fungicola (Winnertz)
WEXFORD: Lady's Island Lake (T1007), 25 May 1987, JPOC.
Swept from vegetation beside a brackish lake.

B.subtilis (Lengersdorf)
DUBLIN: Bohernabreena (O0922), 14 June 1978, PA.
Swept from vegetation beside reservoir.

B.tritici (Coquillett)
DUBLIN: Dublin City (O1633), 25 October 1989, PA.
This species was breeding in the soil of pot plants in an office and the adults were causing considerable nuisance to staff.

Lycoriella (Hemineurina) venosa (Staeger)
WATERFORD: Passage East (S6811), 13 July 1989, JMOC.
Swept from vegetation alongside a hill path.

Plastosciara (Spathobdella) nobilis (Winnertz)
OFFALY: Mongan Bog (N0330), 14 June 1983, PA.
Swept from roadside ditch.

Scatopsciara coei Freeman
WICKLOW: Glendalough (T1196), 24 April 1989, JMOC.
Swept from lakeside vegetation.

Trichosia (Leptosciarella) coarctata (Winnertz)
KILDARE: Carton Estate (N9638), 30 April 1987, JPOC.
Swept in mixed woodland.

T. (L.) viatica (Winnertz)
WEXFORD: Killoughrim Forest (S9041), 4 April 1988, JMOC.
Swept in relict *Quercus* wood.

T. (Trichosia) trochanterata (Zetterstedt)
DUBLIN: Terenure (O1230), 23 May 1990, PA.
Swept in suburban garden.

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INITIATIVE FOR SCOTTISH INSECTS - Scottish-based Entomologists, aware that the insects of Scotland are rich in significance yet poorly understood and in uncertain need of conservation, have recently formed the Initiative for Scottish Insects. The ISI exists to promote the appreciation, knowledge and conservation of the Scottish Insect Fauna. ISI consists of a number of working parties each devoted to a particular insect order including one for arachnids. Working parties are currently assessing the species within the group to which they refer. We would like to contact anyone who has or would like to record or study Scottish Insects. For entomological visitors to Scotland information about sites, species and collaborative projects as well as further details of the ISI are available from Graham E Rotheray, Royal Museum of Scotland, Chambers Street, Edinburgh, EH1 1JF.

Records of some uncommon Tephritidae from Cornwall, Devon, Norfolk, Hampshire and W.Sussex

Simon Grove

As part of an on-going programme of biological survey of National Trust properties, I collected a number of Tephritidae of note from properties in the above listed counties in 1989 and 1990. The list also includes material from some non-Trust land in Hampshire and W.Sussex, collected by me over the same period. All would appear to be very uncommon species nationally, although I stop short of quoting White's (1988) comments on status since more thorough and up-to-date statements should be possible once the atlas of the Tephritidae Recording Scheme (to which these records have been submitted) is produced. I have, however, asterisked records which refer to counties where White did not know of any recent records for the species in question.

Urophora cuspidata (Meigen). *W.Sussex: chalk grassland, Beeding Hill (TQ215103), 1/8/89.

Vidalia cornuta (Scopoli). *S.Devon: coastal scrub woodland, Mill Bay (SX739378), 26/6/90.

Orellia falcata (Scopoli). S.Hants: chalk grassland, Broughton Down (SU289330), 8/7/90.

Terellia winthemi (Meigen). *S.Hants: chalk grassland, St. Catherine's Hill (SU4827), 14/7/90.

Acanthiophilus helianthi (Rossi). *W.Sussex: chalk grassland, Beeding Hill (TQ215103), 1/8/89. *S.Devon: Slumped cliff-edge grassland, Orcombe Cliff (SY025796), 1/8/90.

Icterica westermanni (Meigen). *W.Sussex: chalk grassland, Harting Down (SU8018), 27/7/89. *S.Hants: chalk grassland, Speltham Down (SU645148), 26/7/89 and St. Catherine's Hill (SU4827), 14/7/90.

Paroxyna absinthii (Fabricius). E.Norfolk: Saltmarsh, Blakeney Freshes (TG0445), 16/8/91.

Paroxyna misella (Loew). S.Hants: heathland near Browndown (SZ585997), 11/7/90.

Trupanea stellata (Fuessly). E.Norfolk: coastal pasture, Heigham Holmes (TG445205), 14/8/90.

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SOME NOTEWORTHY RECORDS AND OBSERVATIONS OF TEPHRITID FLIES

S.J. Falk

The R.E.S. handbook to tephritid flies recently published by Ian White (White, 1988) has greatly facilitated the identification of this fascinating group of most highly attractive flies. The stockpiling of material in the years preceding the handbook's publication, and determined efforts at recording them since, have proven particularly rewarding. Some of the more significant finds are listed here.

Icterica westermanni (Meigen). This is one of our largest and most spectacular picture-winged flies and is stated as having larvae that develop within the capitulae of the ragworts *Senecio erucifolius* and *S.jacobaea* (White, 1988). In Warwickshire, where it occurs in the south of the county, there seems to be a particular association with *S.erucifolius* on rough calcareous grassland on clay overlying limestone, especially in areas that have experienced previous disturbance (e.g. abandoned claypits).

It was therefore of some surprise that on encountering a strong though highly localised population of the fly at Castor Hanglands National Nature Reserve, Northants (TF1101) on the 28th July 1990, no *Senecio* could be found in the immediate vicinity, though a few scattered *S.erucifolius* plants were found further afield. The population seemed to be strongly associated with dense stands of Common Fleabane *Pulicaria dysenterica* on heavy (frequently waterlogged) clay overlying limestone. Numerous individuals were observed upon this plant performing their characteristic wing-waving display. Careful sweeping of this and adjacent areas of the site on this day and the 11th August reaffirmed my suspicion, with numerous individuals being obtained from *P.dysenterica*, whilst virtually none occurred on the nearby areas of drier limestone grassland with scattered *S.erucifolius* plants.

In view of the paucity of published information for this nationally scarce species from within the Midlands, it seems worthwhile to list those modern (post-1980) records known to the author. Within Warwickshire, it occurs at Ufton Fields (SP3861), Bishops Itchington (SP3958) and widely within the extensive M.O.D. site at Kineton (SP34 and 35). In Northamptonshire, it occurs at Castor Hanglands as stated, and within west Cambridgeshire Alan Stubbs has recorded it from Bassenhally Pits near Whittlesea (TL2892). Eastern Cambridgeshire has been recognised as a relative stronghold for several decades, some four localities (three with post-1980 records) being obtained from the files of the Nature Conservancy Council for this area. Within Huntingdonshire, it has been recorded from a site near Woodwalton Village in 1967 (Cole, 1981 & pers. comm.) and from Monks Wood National Nature Reserve in 1986 (J. Bratton - pers. comm.). The lack of very old information for Cambridgeshire (it is not listed by J.E. Collin in the Victorian County History published in 1934 nor by A.P.G. Michelmore in 'The Natural History of Wicken Fen' (Gardiner, 1932) - a site that now supports a thriving colony) suggests its status may have increased in this county. The lack of old J.W. Saunt records for Warwickshire (where he collected tephritids

assiduously), probably reflects the fact that he largely concentrated upon the non-calcareous north of the county where *I.westermanni* is unlikely to have occurred.

Paroxyna absinthii (Fabricius). Another scarce species according to White (1988) who notes recent records from only Kent, Norfolk, Surrey and Sussex. Personal experience suggests it is probably widespread but local in the Midlands. Within Warwickshire, post-1980 records exist for Hams Hall Power Station (SP2092), Stockton Quarry (SP4464), Brandon Wood (SP3876), Wyken Croft (SP3680, 3780) and Herald Way Marsh (SP3776). In the east Midlands, further encounters include Stanground Gullet, Cambridgeshire (TL2297) and the path leading to Woodwalton Fen, Huntingdonshire (TL2285). On all occasions the fly has been obtained by sweeping good stands of Mugwort (*Artemesia vulgaris*), often in the company of the larger *P.misella* (Loew) which attacks the same plants. The apparent 'dual personality' of *P.absinthii* is worth noting. In the Midlands, it is typically taken on disturbed ground and beside roads or paths (the favoured habitats of mugwort). In other regions, it seems to predominate at coastal sites where it probably uses Sea Wormwood (*Artemesia maritima*) as its main foodplant. The lack of old information for both *P.absinthii* and *P.misella* within Warwickshire, in spite of the efforts of J.W. Saunt (see Saunt, 1932), strongly suggests these species have increased their status here. *P.misella* in particular is a species that could only be overlooked in Warwickshire with difficulty today and in passing it should be stated that the apparently localised nature of *P.misella* in the county described by Robbins (1990) is not supported by the data amassed by myself and my colleague, A.C. Barlow. We regard it as one of the commmoner tephritids, at least in the Coventry area.

Terellia longicauda (Meigen). Numerous individuals were found upon the capituli of Woolly Thistle (*Cirsium eriophorum*) on dry limestone grassland at Castor Hanglands on 28th July 1990. White (1988) gives the distribution, but not the status of this species. Judging by the distribution of its foodplant (which is concentrated into a broad diagonal band across Britain corresponding to limestone geology), and the loss of semi-natural grassland within this area, the fly is unlikely to be particularly common nationally. The only Warwickshire record I am aware of is for a series bred from *C.eriophorum* seedheads obtained form Halford in 1931 (Saunt, 1932). In the field, its much larger size and rather brighter-blue appearance allows easy separation from the common *T. serratulae* (Linnaeus).

Tephritis hyoscami (Linnaeus). A southern species occurring as far north as the Midlands according to White (1988). The capture of some specimens at Crichton Glen, Midlothian (NT6138) on 3rd July 1985 appear to represent the first Scottish records and a considerable extension to its British range. The site contains unimproved grassland and marshland with plenty of Marsh Thistle (*Cirsium palustre*), Spear Thistle (*Cirsium vulgare*) and some problematic plants that could represent one of its known foodplants, Welted Thistle (*Carduus acanthoides*) or possibly a thistle hybrid (G. Rotheray - pers. comm.). Within Warwickshire, *T. hyoscami* is widespread but generally local.

Oxyna flavipennis (Loew). A number of specimens of this apparently rare species were obtained from various parts of the breck grassland at Stanford Army Training area, W. Norfolk (TL88,89,99) on 21st August 1985.

Campiglossa argyrocephala (Loew). This Scottish speciality was encountered at two unimproved grassland sites near to the R. Dee in S. Aberdeenshire: Dinnet Oakwood National Nature Reserve (NO4499) and nearby Abergeldie (NO2895), both on 30th June 1985.

Urophora solstitialis (Linnaeus). Small numbers were obtained from the breck grassland at Stanford Army Training area (TL8497) on 21st August 1985. More recently, another population was discovered on cattle- grazed grassland at Stanground Gullet, near Peterborough, Cambridgeshire (TL2297) on 26th May 1990. These were almost certainly associated with dense stands of Musk Thistle (*Carduus nutans*). The particularly long ovipositor of the female by comparison with the common knapweed-feeding *U.jaceana* (Hering) provides a useful field character as it can just about be discerned with the naked eye 'dan la pooter'.

In conclusion, it should be stated that the Midlands where I now reside are proving to be a rich hunting ground for tephritids. Though much semi-natural habitat has been lost here, there remains an abundance of disturbed ground (e.g. 'waste ground') resulting from quarrying, demolition, dumping and other forms of human activity. Such sites are often difficult to conserve, yet they are clearly an important refuge for tephritids as well as many highly declined animals and plants that were once common on the formerly widespread rough grassland and heathland of the area. In my experience, disturbed sites with a particularly rich tephritid fauna (perhaps upwards of a dozen species for sites in the Midlands) tend to be those with a high conservation value for a wide range of animals and plants. This is a factor that could easily be taken into account in survey work and site assessment by conservationists, environmental consultants and the like. In other words, tephritids could prove to be a useful indicator group for disturbed ground, in much the same way as hoverflies and beetles are for ancient woodland.

Orellia falcata (Scopoli). This large nationally scarce species, which attacks the roots of Goatsbeard *Tragopogon pratensis*, has been found at 4 meadow sites in and around Coventry (SP3477, 3682, 3879, 3979) during 1986 and 1991. This establishes its presence in the Midlands apparently for the first time. All records refer to singletons, though at least two of the sites support the foodplant in profusion and were swept thoroughly. This could suggest the use of low population levels, or perhaps reflect a secretive native low in vegetation. My 1991 experiences suggest it will prove more widespread in the area as further good *Tragopogon* populaations are encountered.

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Scaeva selenitica (Meigen) recorded in March with discussion on the overwintering status of Scaeva species in Britain

S.J. Falk

A fresh, rather dark female of *S. selenitica* was captured resting on a bramble leaf in Brandon Wood, Warks (SP3876) on the 21st March 1990. This seems an exceptional record, being over two months in advance of its normal flight period of June to August (Stubbs & Falk, 1983). The record provides strong evidence to the statement by Speight (1985) that the species is residential in the British isles, unlike other *Scaeva* species. The date of the record is considered far too early for a migrating individual, as most strongly migratory syrphids (e.g. *S. pyrastri* (Linnaeus)) generally do not seem to appear before late May or June.

The rather dark appearance of the specimen (due to unusually narrow abdominal lunules) suggests abnormally early emergence from the pupal stage, perhaps in response to a very warm and early spring. Furthermore, if overwintering in the adult stage was the normality in this species, we would expect to see it on the wing regularly in early spring, in much the same way as *Eristalis tenax* (Linnaeus) and *Episyrphus balteatus* (Degeer) which are known to overwinter as adults.

Further evidence to support the residential status of *S. selenitica* can be derived from its distribution and apparent year to year status. Records are scattered widely throughout Britain, including many western and northern areas (e.g. Wales, Ireland, the Orkneys) without a strong southerly bias. There is little evidence to suggest strong year to year fluctuations in frequency and it does not seem to exhibit periods of great abundance in the south. A rather strong association is shown with coniferous woodland, and it was bred from a puparium found under spruce in mid-Wales (Stubbs & Falk - loc.cit.)

This contrasts strongly with the situation found in *S. pyrastri* which is considered highly migratory and unlikely to overwinter in the British Isles. It shows a considerable southern bias, with marked variation in its frequency from year to year, often with years of tremendous abundance. There is little apparent habitat preference by *S. pyrastri*, though it can be particularly numerous in southern coastal districts during good years. On the Continent, both Goeldlin de Tiefenau (1974) and Schneider (1969) report it overwintering in the adult stage.

Our two scarcest species, *S. albomaculata* (Macquart) and *S. mecogramma* (Bigot) are both highly migratory species only known in Britain from single specimens, which were probably vagrants or imports from a continental source. The apparent contrast between the ecological strategy of *S. selenitica* and other *Scaeva* species is an interesting one and there is clearly plenty of scope for further investigation. Analysis of B.R.C. data could help to elucidate more precisely the patterns of annual immigration by *S. pyrastri* as well as a number of other syrphids that are known to be at least partially migratory.

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Tachydromia terricola Zett. (Diptera : Empididae) and other dune slack species at Dungeness, Kent.

R.K.A. Morris

In 1988 and 1989, a Nature Conservancy Council team undertook a detailed survey of the Invertebrate fauna of Dungeness, Kent. The project concentrated on standard sampling techniques comprising pitfall and water trapping with some active searching. All major habitat types were examined, including artificial conditions created by shingle extraction where three trap runs were established on unreclaimable fine sand around ARC Pit. Of these, two trap runs were situated on dryer sand well away from the water's edge (TR06801992 & TR07331924) and a single trap run was placed at the water's edge (TR06771923).

Among the material from the latter trap run (TR06771923) was a *Tachydromia*, with clear wings, that is not described by Collin (1961). This proved to be *T.terricola* which was described as new to Britain by Allen (1983) who found the species in "the sandpit near Lydd". Since 1983, there do not appear to be further published records. Almost all of the material obtained during the NCC survey was taken in pitfall traps. The first examples of *T.terricola* were taken over the period 6- 20 June 1989 (Seven individuals in pitfall traps). The subsequent trap run (20-6/4-7.1989) yielded a further 13 specimens, only one of which was from a water trap. No further trapping occurred until 29.8.1989 and in the period 29.8/11.9.1989, a further example was taken in a pitfall trap. This

evidence suggests that *T.terricola* does not fly frequently, preferring to run over the bare sand. Without a continuous period of trapping, it is not possible to establish whether the species is single or double brooded. However, it does appear to have an extended flight period.

The same trap run also yielded the dolichopodid fly *Chrysotis suavis* which appears to inhabit the same damp sandy localities. A total of 46 specimens of *C.suavis* were taken between 23 May and 11 September at this site. Again, the majority (30 specimens) were recorded from pitfall traps. A single specimen was also taken in a pitfall trap on a patch of dry unvegetated sand (TR07331924).

It would appear that by pumping sandy silt back into the workings and creating an environment not dissimilar to dune slacks, ARC have provided an artificial habitat suitable for many dune slack species. Other species, normally found on sand dune systems, recorded from this area, include the bombylid fly *Phthiria pulicaria* and the therevid fly *Thereva annulata*. There are also similar trends amongst the hymenoptera including a substantial colony of *Dasypoda altercator*.

The source of these species is unknown but suspicion must rest upon Camber dunes which formerly included a sizeable dune slack system, now largely lost to the development of a golf course. It seems very likely that a number of other sand and shingle pits in the Dungeness/Camber area could support species such as *T.terricola* and *C.suavis*. However, let this not be a reason for permitting further damage to a shingle system that is one of the finest in the world. Much of the fauna is unusual and the assemblages may be unique. It is these that must be safeguarded.

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I would like to thank ARC Ltd for permission to sample invertebrates on their land. I would also like to thank Alan Stubbs for identifying the therevid and Mike Edwards for identifying *Dasypoda altercator*.

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R.K.A. Morris, The Joint Nature Conservancy Committee, Monkstone House, City Road, Peterborough, PE1 1UA.

Sciapus zonatulus (Zett., 1843) in Great Britain (Dolichopodidae)

Martin C.D. Speight

The revision by Meuffels and Grootaert (1990) of the western European species related to *Sciapus contristans* reveals that 4 species have been confused in this group, one of them previously undescribed: *S.basilicus* Meuffels and Grootaert, *S.contristans* (Wied.), *S.maritimus* Becker and *S.zonatulus* (Zett.).

The *S.contristans* of Fonseca (1978) corresponds with *S.contristans* as recognised by Meuffels and Grootaret (1990), in the male sex. However, the features used by Fonseca (l.c.) to identify females of *S.contristans* would not allow separation of that species from others of the group. Further, the features used by Fonseca (l.c.) to separate *S.maritimus* can now be seen to be insufficient for distinguishing either sex of this species from *S.basilicus* and *S.zonatulus*, so that British material consigned to *S.maritimus* in collections could prove to comprise a mixture of all three of these species. The limited British material of "*S.maritimus*" available to Meuffels and Grootaert (1990), derived from the New Forest, proved to belong to *S.zonatulus*. My only British "*S.maritimus*" (Dorset, 20 June 1966, Hengistbury Head SZ1790, on sandy path in coastal heath) also identifies convincingly as *S.zonatulus*, using their keys.

The status of *S.maritimus* Becker on British lists must now be regarded as suspect. Indeed, *S.maritimus* may not be present in the British Isles. However, to judge from the continental distribution data provided by Meuffels and Grootaert (1990), it is as likely that more comprehensive re-examination of British specimens will demonstrate that all 4 of the western European *Sciapus* species in the *contristans* group occur in Great Britain. None of these species are yet known from Ireland.

The keys provided by Meuffels and Grootaert (1990) include all of the *Sciapus* species known from Belgium and Netherlands. They cover all of the species included in Fonseca (1978) except *S.loewi* Becker, together with six additional species not as yet recorded in the British Isles.

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