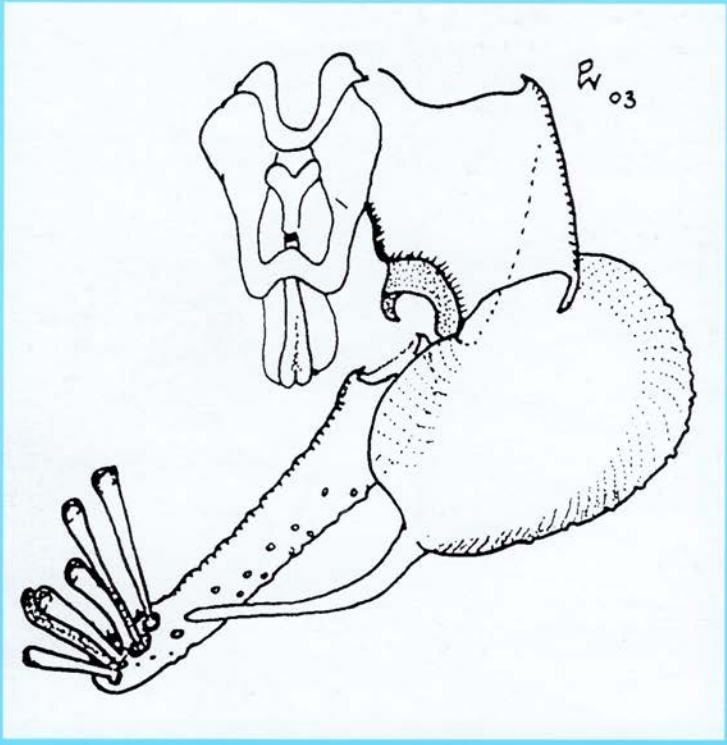
Dipterists Digest



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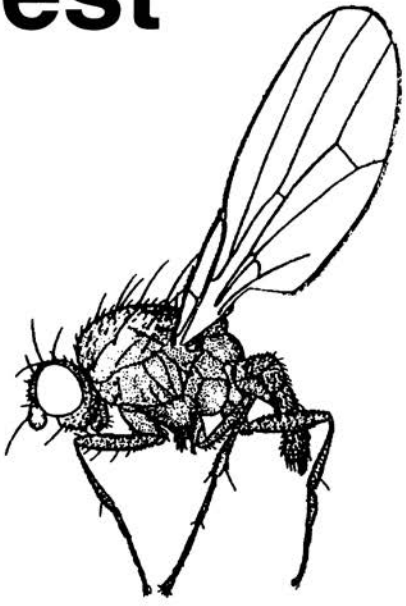

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Dipterists Digest is the journal of the **Dipterists Forum**. It is intended for amateur, semi-professional and professional field dipterists with interests in British and NW European flies. All notes and papers submitted to **Dipterists Digest** are refereed. The scope of **Dipterists Digest** is:

- the behaviour, ecology and natural history of flies;
- new and improved techniques (e.g. collecting, rearing etc.);
- the conservation of flies;
- provisional and interim reports from the Diptera Recording Schemes, including maps;
- records and assessments of rare or scarce species including those new to regions, countries etc.;
- local faunal accounts and field meeting results, especially if accompanied with good ecological or natural history interpretation;
- descriptions of species new to science;
- notes on identification including deletions or amendments to standard key works and checklists.

Articles may be of any length up to 3,000 words and must not have been accepted for publication elsewhere. Items exceeding this length may be serialised or printed in full, depending on competition for space. Articles should be written in clear and concise English and should preferably be typed double spaced on one side of A4 paper. **After acceptance all contributions should, wherever possible, also be supplied on 3.5" computer disc** in ASCII, Word or Word Perfect formats and accompanied by hard copy. (E-mail attachments are acceptable).

Style and format should follow articles published in the most recent issue. A short Summary (in the form of an Abstract) should be included at the beginning of each article and should be supplied with the article. References to journals should give the title of the journal in full. Scientific names should be underlined or, preferably, italicised. **If an article is to be supplied on disc, scientific names should always be italicised.** Authors of scientific names should be given in full (with parentheses if applicable) and nomenclature should follow the most recent check list, unless reflecting subsequent changes. Tables should be on separate sheets. Figures should be drawn in clear black ink, about 1.5 times their printed size and lettered clearly. Descriptions of new species should include a statement of the museum or institution in which type material is being deposited.

Authors will be provided with twenty separates of papers of two or more pages in length.

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Dipterists Digest 2004 **10**, 67-68

Atylotus rusticus (Linnaeus) (Diptera, Tabanidae) at the Long Herdon and Grange Meadows Reserve, Buckinghamshire

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Summary
Recent records for the horsefly *Atylotus rusticus* (Linnaeus) from the Long Herdon and Grange Meadows Reserve in Buckinghamshire are presented, together with some notes on the identification of the species.

In Britain, *Atylotus rusticus* (Linnaeus) is an extremely uncommon species of horsefly and is accorded Endangered (RDB1) status by Falk (1991). The species was recorded from Monks Wood in Cambridgeshire in 1828 and there are also old records from the Lewes area of Sussex in 1883 and from Eastbourne in 1900. The only recent records are also from the Lewes area of Sussex, with the species being recorded from near Lewes in the early 1960s and from the Pevensey Levels in 1961 and 1996. Stubbs and Drake (2001) concluded that the combination of grazing marsh and ditches found in the Pevensey Levels represent the required habitat for this species. Stubbs (2003) recorded a male at garden flowers just within the Kent side of the Sussex border and suggested levels habitat in the Medway valley as a possible source.

The Long Herdon and Grange Meadows Reserve (SP648202) is situated on the Oxfordshire Plain with the River Ray forming the southern boundary. Long Herdon Meadow is an SSSI owned by the Berkshire, Buckinghamshire and Oxfordshire Wildlife Trust (BBOWT); Grange Meadow was acquired by Plantlife in 1991 and is managed by BBOWT. Both are flat flood meadows with damp, unimproved, flower rich grassland. They are cut for hay late in the season and cattle graze the aftermath. Between the meadows are thick hedges dominated by blackthorn and accompanied by well-vegetated ditches. The surrounding fields are down to permanent pasture and the site is strongly reminiscent of coastal grazing levels.

On 19.vii.2002 MNS visited the site to carry out an invertebrate survey. Sweeping along the edge of a ditch dislodged a single male *Atylotus*. This was identified as *A. rusticus* and exhibited at the 2002 BENHS exhibition (Smith 2002), although the site locality was erroneously given as Oxfordshire. At the time this was assumed to be the first modern record of the species away from Sussex. However, later examination of material collected from the site by JAW on 29.vi.2002 also identified a specimen of *A. rusticus*. This too was a male, swept from yellow composite flowers. JAW revisited the reserve on 29.vi.2003 to see if the species could be re-found and caught a further two males and a single female, again by sweeping.

Specimens were identified using Stubbs and Drake (2001). Some slight problems were encountered keying male specimens. In the key to genera of Tabanidae. *Atylotus* is keyed out in Couplet 3. Here the femora are described as 'mainly yellow or orange red (rarely only a quarter pale) and/or abdomen almost entirely ash-grey....'. In the key to male *Atylotus* species, *A. rusticus* and *A. plebeius* (Fallén) are separated out on the basis of the 'front femora mainly black' and are described as having black femora in the species accounts. All of the male specimens from Long Herdon had black front femora. Given this, when using the generic key to separate *Atylotus* from

Hybomitra and *Tabanus*, we would suggest more reliance should be placed on the colour of the halteres and antennal segments rather than the colour of the femora.

A. rusticus is described as a moderate sized, grey species with entirely clear wings with variable amounts of yellow on the flanks. The female is noted as being very distinctive in that the grey abdomen has four splayed dark lines running its full length. The female caught by JAW shows no discernible lines running the length of the abdomen. When alive the specimens were all remarkable because of their beautiful light green, extremely large eyes. These darkened after death.

The capture of a single specimen of an uncommon species such as *A. rusticus* often raises the question as to whether the species is actually resident on site or is a vagrant. Vagrancy in this case seems extremely doubtful given the distance between Long Herdon and the Pevensey Levels. Having recorded both males and females from the site, and to have found the species two years in succession, strongly suggests that there is a resident breeding population of this rare fly on the Long Herdon and Grange Meadows reserve. BBOWT has recently acquired further meadows adjacent to the ones where *A. rusticus* was caught and it is to be hoped that sensitive management of the whole complex will secure the future of this species.

Acknowledgements

MS would like to thank BBOWT for funding the invertebrate survey as part of the HLF Baseline Survey Project. JAW would like to thank BBOWT for permission to collect at the site, the Hope Entomological Collections for research facilities and is grateful to J.W. Ismay for confirming the identification of specimens. Three of the above specimens collected by JAW are lodged in the Hope Department of Entomology, The Oxford University Museum of Natural History.

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***Ctenophora pectinicornis* (Linnaeus) (Diptera, Tipulidae) in Cumberland** – The majority of records for this species in Stubbs (1992. *Provisional atlas of the long-palped craneflies (Diptera: Tipulinae) of Britain and Ireland.* Biological Records Centre, NERC/ITE) come from southern Britain and none are shown from Cumberland (V.C. 70). I have two records from this area: Side Wood, Ennerdale (NY118140), a male beaten from hawthorn (*Crataegus*) within this open ancient wood pasture, 12.vi.1991; Holme Wood, Loweswater (NY125212), a female swept from the lakeside edge of this former wood pasture which has been enclosed for forestry purposes and is now largely closed canopy, 17.vi.1991 – **KEITH N.A. ALEXANDER,** 59 Sweetbrier Lane, Heavitree, Exeter EX1 3AQ

Dipterists Digest 2004 **10**, 69-71

Galba truncatula (Müller), the liver fluke snail: confirmed as alternate host of *Pherbellia schoenherri schoenherri* (Fallén) (Diptera, Sciomyzidae) in the wild

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Summary
General information on the malacophagous feeding behaviour of larvae within the family Sciomyzidae (Diptera: Acalyptratae) is presented. A new host snail (*Galba truncatula* (Müller)), which may act as a secondary food source, is confirmed for *Pherbellia schoenherri schoenherri* (Fallén). Reference is also made to the biological control potential of this species.

Since Berg (1953) first highlighted the malacophagous feeding behaviour of sciomyzid larvae, considerable interest in the group has arisen. A total of 531 species are now known worldwide and of these a total of 186 species from 39 genera have been reared on aquatic, semi-terrestrial and/or terrestrial snails or snail eggs, slugs, fingernail clams or oligochaete worms (Knutson and Vala 2002). Such malacophagy highlights the economic and medical importance of this group as potential biological control agents of snail hosts of trematode diseases of humans (schistosomiasis) and livestock (fascioliasis) and of snail and slug pests of agricultural and horticultural systems. Records of sciomyzid larvae found feeding in nature are important because they contribute to a greater understanding of the ecology and development of sciomyzid species, which is crucial for successful biological control (Mc Donnell *et al.* in press).

Much of the information on the food of sciomyzid larvae has been obtained from laboratory rearings where the predaceous to parasitoid larvae were offered a variety of Mollusca and other invertebrates as potential prey or hosts. This applies especially to the many aquatic and semi-aquatic predators in the Tribe Tetanocerini. These species kill quickly and feed on fresh tissue for a relatively brief period. They then rest or forage away from the consumed prey and do not form their puparia in snail shells. However, Mc Donnell *et al.* (in press) recorded ten species in seven genera of aquatic, predaceous Tetanocerini, the larvae of which were found feeding in nature on fifteen species in seven genera of Lymnaeidae, Physidae and Planorbidae. More extensive information on natural food is available for the terrestrial and semi-terrestrial larvae in eight of the twelve genera of the Tribe Sciomyzini and in the genera *Salticella* (Salticellinae) and *Anticheta* (Tetanocerini). These species remain feeding in the shells of the host/prey and for a few, the parent female oviposits onto the shell or egg masses of the host, thereby allowing direct associations to be made. From laboratory rearings, most aquatic and semi-aquatic, predaceous Tetanocerini seem to have a very broad prey range, whereas most of the terrestrial and semi-terrestrial larvae (both Sciomyzini and Tetanocerini) appear to be more specialist. However, some of the latter, e.g. *Atrichomelina pubera* (Loew) (Sciomyzini) appear to have a broad food range, feeding on an ecological assemblage of snails (Foote *et al.* 1960). The most host specific sciomyzids appear to be the few species of terrestrial or semi-terrestrial parasitoid Sciomyzini that have highly intimate

relationships with their host. That is, the female parent oviposits onto the shell, larvae feed for a relatively long period (several days) before the snail dies and generally there is only one larva per snail. Larvae also tend to feed on only one snail and the puparium is formed within the shell upon which the egg had been laid. Among the many species of Sciomyzini and Tetanocerini that have mixed parasitoid-predatory behaviours there seems to be a tendency for the somewhat parasitoid first instar larvae to be more host/prey specific than the more predatory older larvae. Such information on the range of prey/hosts is important both in selecting species as potential biocontrol agents and in further development of an evolutionary scenario of the Sciomyzidae.

The genus *Pherbellia* Robineau-Desvoidy, the second largest genus in the family (after the primarily aquatic, predaceous genus *Sepedon* Latreille) includes 94 described species and occurs in all zoogeographic regions except the Subantarctic. Worldwide, 26 species are known biologically, ranging from strictly terrestrial to semi-terrestrial forms. Seventeen species are known from Britain, twelve of them also from Ireland (McLean 1998, Cole 2003). *Pherbellia schoenherri schoenherri* (Fallén), which ranges from Ireland to Japan, is small (3.2 – 5.0mm long) with a distinctively spotted wing, common in a variety of moist situations where the primary hosts, semi-terrestrial or 'aerial' snails of the family Succineidae, occur. For the malacological taxonomy we used the recent nomenclature of the check-list of French non-marine molluscs (Falkner *et al.* 2002). The Nearctic subspecies, *Pherbellia schoenherri maculata* (Cresson) ranges across northern North America from Newfoundland to north-western Alaska. It feeds, in nature and in the laboratory, on species of Succineidae, mainly in the genera *Succinea* and *Oxyloma*, and in laboratory rearings does not attack aquatic snails of the genera *Helisoma, Lymnaea* and *Physa* (Bratt *et al.* 1969). Unlike *P. s. schoenherri*, *P. s. maculata* does not oviposit on the shell of its host. There are also some morphological differences in the adults of the two subspecies and eventually they may be shown to be distinct species. *P. s. schoenherri* is one of the most extensively studied, highly parasitoid Sciomyzidae, in both laboratory experiments and field studies. In most respects, it is an example of the group of highly specialised parasitoids restricted to only one or a few species of snails in only one or two closely related genera. Verbeke (1960), Moor (1980) and Vala and Ghamizi (1992) reared *P. s. schoenherrri* from *Succinea putris* (Linnaeus) and *Oxyloma (Succinea) elegans* (Risso) collected in nature. In laboratory rearings, Vala (*in litt.*) found that the fly would oviposit onto *Helicella* species and the emerged larvae completed their development on this terrestrial snail. Beaver (1972) reared *P. s. schoenherri* in the laboratory on *S. putris* but found that it would also kill and feed on *Galba truncatula* (Müller), which she speculated serves as an alternative host when the primary host is rare.

Our record is of a third instar larva found on 28 July 2000 feeding on a living *G. truncatula* in a wet grassland adjacent to the River Corrib near Galway city in the west of Ireland (M283280). This grassland floods during the winter and only partially dries out during the summer, leaving patchy, shallow pools of water. The snail was found on mud on the edge of one of these seasonal pools. No eggs were found on the snail shell and in the laboratory the larva killed but did not fully consume the snail. It pupated outside of the shell on 31 July 2000 without feeding on any other snail species presented to it (*Lymnaea stagnalis* (Linnaeus), additional *G. truncatula*). A male emerged on 12 August 2000. This record is evidence that such feeding behaviour occurs in nature, with species such as *G. truncatula* acting as secondary food sources. Such behaviour could be viewed as a survival adaptation allowing this species to survive in areas and during seasons when its primary and preferred food snail species is rare or absent. Such flexible feeding behaviour may give *P. s. schoenherri* a distinct advantage over other more food-snail specific sciomyzid species, allowing it to establish and colonise a wide range of moist to aquatic habitats. The ability of this

species to feed on *G. truncatula* also highlights its potential as a biological control agent in liver fluke prone areas where snails of the genus *Succinea* are rare or absent.

Acknowledgements
Many thanks are due to J-C. Vala, for allowing us to cite his unpublished rearing of *P. s. schoenherri* on *Helicella* species. We also thank O. Beaver, B.A. Foote, C. J. Mulkeen, R. Rozkošný and J-C. Vala for reviewing the manuscript.

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***Eristalis tenax* (Linnaeus) and *Scaeva pyrastri* (Linnaeus) (Diptera, Syrphidae) recorded for the first time from North Uist, Outer Hebrides** - Although *Eristalis tenax* (Linnaeus) and *Scaeva pyrastri* (Linnaeus) are widespread in the central and southern parts of the British Isles, they are less widely distributed in Scotland (Ball, S.G. and Morris, R.K.A. 2000. *Provisional atlas of British Hoverflies (Diptera, Syrphidae)*. Biological Records Centre, Centre for Ecology and Hydrology, Monks Wood, Cambridgeshire). Both species have been recorded from the Isle of Skye, but not previously from the Outer Hebrides (Ball and Morris, *op. cit.*; McCullough, A., Wakeham-Dawson, A. and Parker, M.J. 2002. A provisional checklist of the hoverflies (Diptera, Syrphidae) of the islands of North Uist, South Uist, Benbecula, Eriskay and Berneray in the Outer Hebrides. *Dipterists Digest* (*Second Series*) **9**, 95-102). However, on 28 July 2003 a single female *E. tenax* was captured in flower-rich machair at Hornais on the north Coast of North Uist (NF8776). It was windy, with intermittent sunshine and rain showers. On 30 July 2003, male and female *S. pyrastri* were relatively numerous feeding at clover flowers in machair meadows managed by the Royal Society for the Protection of Birds (RSPB) at Balranald (= Baile Raghnill, NF7169). The weather was hot and sunny.

The addition of these two species to the provisional hoverfly checklist for the Outer Hebrides (McCullough *et al.*, *op. cit.*) brings the current total for the islands to 55 species. It should be noted that the grid reference given in the checklist for Baleshare (= Baile Sear) is incorrect and should read NF7863. The reference given (NF7565) is in fact for Kirkibost Island (= Eilean Chirceboist). The area we referred to as Newton (NF8877) is now labelled only as Baile Mhic Phail on Ordnance Survey Maps - **ANDREW WAKEHAM-DAWSON,** International Commission on Zoological Nomenclature, c/o The Natural History Museum, Cromwell Road, London SW7 5BD and **ANGUS MCCULLOUGH,** 108 Addison Gardens, London W14 0DS

***Conioscinella gallarum* (Duda) (Diptera, Chloropidae) reared from "Oak-apple" galls in Scotland** - The cynipid wasp, *Biorhiza pallida* (Olivier, 1791), for the sexual generation, forms large spongy "oak-apple" galls on deciduous oak (*Quercus* species) and although the species is widely distributed in the southern half of Scotland it is quite local. Several "oak-apple" galls were found on a young oak tree overhanging the top of an old quarry in Binn Wood (NO1613), Glen Farg, Perthshire (V.C. 88) on 16.iii.2003. The imagines of the gall-causer had already emerged but between 23.iii.2003 and 4.v.2003 several chalcidoid inquilines and parasites emerged from the galls accompanied, on 13.iv.2003, by two small black flies which were later identified as the uncommon chloropid, *Conioscinella gallarum* (Duda, 1933). There are few rearing records of this chloropid species and no previous published records of it from Scotland. I am very grateful to Dr John Ismay of the Hope Entomological Collections, Oxford University Museum of Natural History, for identifying the flies and for helpful advice - **K.P. BLAND,** National Museums of Scotland, Chambers Street, Edinburgh EH1 1JF

Dipterists Digest 2004 **10**, 73-83

A mark-release-recapture study of *Volucella bombylans* (Linnaeus), *V. inflata* (Fabricius) and *V. pellucens* (Linnaeus) (Diptera, Syrphidae)

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Summary

Aspects of population biology and behaviour arising from mark-release-recapture studies of three species of *Volucella* are described. A total of 97 *Volucella bombylans* (Linnaeus), 182 *V. inflata* (Fabricius) and 686 *V. pellucens* (Linnaeus) were marked in Old Sulehay Forest, a 35 ha woodland in Northamptonshire. Population levels were estimated of 200 (*V. bombylans*), 656 (*V. inflata*) and 1963 (*V. pellucens*), although the confidence limits are poor. Overall, 16% of marked individuals were recaptured at least once, but the proportion recaptured varied between visits as a result of sampling effort, changes in the distribution of nectar sources and levels of recruitment into the population. Estimates of adult longevity of between two and three weeks seem to be similar to other published studies across a variety of invertebrate taxa. The use of mark-release-recapture as a technique for estimating population size and longevity of individuals is evaluated. We also describe observed behavioural characteristics of the males of all three species.

Introduction

There are surprisingly few accounts of mark-release-recapture of Diptera, although it is a technique that is employed across a wide range of vertebrate and invertebrate taxa. A search of Cambridge Scientific Abstracts from 1978 to 2003 using mark-release-recapture as the key word, yielded more than 1300 hits. Very few related to Diptera. An Internet search for mark-release-recapture using Google reveals many more hits when filtered for Diptera (128 hits), only surpassed amongst popular insect Orders by Lepidoptera (154 hits). Most of the published literature concentrates on medical and veterinary entomology, and includes many studies of the mosquito *Aedes aegypti* (Linnaeus in Hasselquist, 1762) (e.g. Trpis *et al.* 1995), the tsetse fly *Glossina morsitans* Westwood (e.g. Hargrove 2001), and the blowfly *Lucilia sericata* (Meigen, 1826) (Smith and Wall 1998). There are very few published studies of hoverfly populations; these include *Eristalis pertinax* (Scopoli, 1763) (Holloway and McCaffery 1990), *Merodon equestris* (Fabricius, 1794) (Conn 1976) and *Helophilus hybridus* Loew, 1846 and *Sericomyia silentis* (Harris, 1776) (Nielsen 1969). They show that mark-release-recapture can be used to investigate some aspects of Diptera population dynamics, adult dispersal and longevity.

Our interest in using mark-release-recapture was stimulated by curiosity about the population of *Volucella inflata* (Fabricius, 1794) at Old Sulehay Forest, Northamptonshire (TL0698). Within the genus *Volucella* in Britain, *V. inflata* is unusual because its larvae are reported from sap runs (Rotheray 1994) in contrast to the other species of the genus that are closely associated with the nests of social bees and wasps. It is a largely southern species, mainly confined to the south of a line between The Wash and the Severn Estuary, with Northamptonshire populations at its most north-easterly extreme (Ball and Morris 2000). Casual observations suggested that *V. inflata* was unusually abundant in Old Sulehay Forest.

In the process of investigating *V. inflata* we also took the opportunity to look at both *V. bombylans* (Linnaeus, 1758) and *V. pellucens* (Linnaeus, 1758), which are widespread across the

British Isles. Our work covered the full flight period of *V. inflata* and *V. pellucens*, but missed the beginning of the flight period for *V. bombylans*.

Site description

Old Sulehay Forest is listed in the ancient woodland directory for Northamptonshire (Robinson, 1988). It lies on Jurassic limestone within a wider landscape of woodland, hedgerows and pasture. There are disused limestone quarries adjoining the site to the north and south-west. It is designated as a Site of Special Scientific Interest (SSSI) and is owned by the Bedfordshire, Cambridgeshire, Northamptonshire and Peterborough Wildlife Trust. The stand types within the woodland largely comprise oak *Quercus* spp. and ash *Fraxinus excelsior*, but include an area of small-leafed lime *Tilia cordata* and sycamore *Acer pseudoplatanus*. Horse chestnut *Aesculus hippocastanum*, beech *Fagus sylvatica* and sweet chestnut *Castanea sativa* are further localised introductions. The ground flora reflects local variation in geology and in management. It includes large areas of wood anemone *Anemone nemorosa*, dog's mercury *Mercuralis perennis*, bluebell *Hyacinthoides non-scripta* and wild garlic *Allium ursinum*.

A sizeable part of the woodland was clearly managed as hazel *Corylus avellana* coppice with oak and ash standards; ancient coppice stools and a few boundary pollards along the main ride are indicative of this management and contribute substantially to the dead-wood resource within the wood. Most of the trees are relatively young, indicating widespread felling in the 1940s or 1950s. More recently, the wood was managed as a pheasant shoot and the rides were managed to support this activity, with whole sections of the rides cleared by a flail.

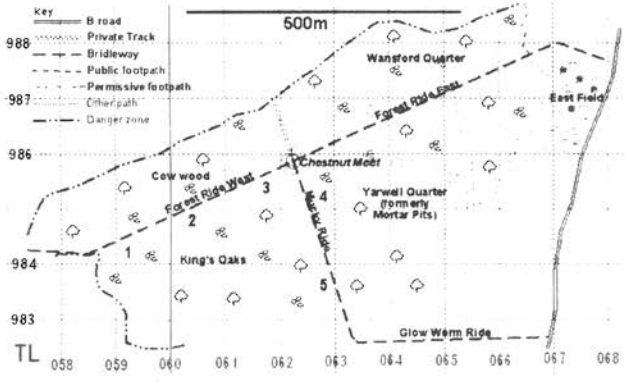


Fig. 1. Map of Old Sulehay Forest, Northamptonshire, showing sampling stations within the wood (marked 1 – 5). 100m squares of the National Grid are shown.

The Forest (Fig. 1) is some 35ha in extent. It is bisected (south-west to north-east) by a public bridle way that historically formed a ride some 900 metres long and 20 metres wide, as is shown by the presence of well-defined boundary ditches and boundary pollards. Today, this ride is partially wooded, with localised open areas but scrub and tree clearance is being reintroduced to widen open

areas along its length. A narrower ride (350 metres long and 10 metres wide) orientated from south-east to north-west intersects the main ride around halfway along its length.

Methods and materials

The study, which was undertaken between 7 June and 27 July 2003, was triggered by the first occurrence of *V. inflata* during site surveys by RKAM (a single male at Barnack Hills and Holes NNR on 5 June 2003). Visits were made on as many occasions as other commitments permitted, with a major gap (15 - 21 June). This effort comprised a total of 114 man-hours fieldwork on 20 different dates. Data recorded comprised the species, sex, date of capture, time and location of each capture, and activity of the specimen at the time of capture. Similar data were retained on recapture of individuals. A note was made of general weather conditions on each day, but no detailed weather measurements were made.

Unlike *Eristalis pertinax*, which occurs in substantial numbers at flowers and can be marked without capture (Holloway and McCaffery 1990), *Volucella* species are extremely difficult to approach and mark. Some do visit flowers, but males spend much of their time actively searching for females or defending territories. Initially, most specimens of *V. inflata* and *V. pellucens* were found at dogwood *Cornus sanguinea*, whilst *V. bombylans* were usually found resting on foliage. The principal nectar sources changed through the study period so that dogwood was followed by bramble *Rubus fruticosus*, privet *Ligustrum vulgare* and hogweed *Heracleum sphondylium*. As the season progressed, the majority of male *V. pellucens* (which became the most abundant species) were taken as they hovered defending a territory, rather than at nectar sources (see Table 2). All specimens were netted and extracted by hand for marking, with efforts being made to minimise the time between capture and release. This approach to marking is similar to that used by Nielsen (1969) and, unlike Conn (1976), no attempt was made to cool and anaesthetise specimens.

Fig. 2. Examples of thoracic spot patterns used to mark individual *Volucella*. Spots of coloured Humbrol Enamel paint were applied using a cocktail stick and a different colour used for each sampling occasion. The photograph shows a specimen of *V. pellucens* marked with the pattern shown 3rd from the left in the top row

Each specimen was given a unique pattern of spots, using a different colour of Humbrol Enamel paint for each day's recording. A total of nine different positions on the thorax together with a further position on the scutellum provided enough markings to create 40 or so recognisable patterns. Examples of the patterns used are given in Figure 2. On days when numbers captured

exceeded practical spot patterns, a combination of colours was used, such that the colour of the day was accompanied by additional spots of either yellow or light blue (or both). Sufficient readily distinguishable colours were secured by mixing the main colours (including a variety of daglo and metallic colours) with either white or yellow. Spots were applied to the top of the thorax using a cocktail stick. Applying neat spots to the shiny cuticle of *V. inflata* and *V. pellucens* exposed some practical difficulties. Unless the paint was just the right consistency it had a tendency to run and cover the entire thorax. The hairy *V. bombylans* also caused problems because it was difficult to get paint onto the cuticle itself and paint applied only to the hairs was more obviously affected by loss of hairs. Also, the hairs on the thorax tended to mean that paint had to be less viscous with a greater tendency to run. This suggests that marking the thorax may not be a practicable approach for studies of hairy species such as *Criorhina*.

Results and Discussion

Marking method

It might be expected that capture and marking is sufficiently traumatic that fatalities and short-term behavioural changes might be anticipated. Some evidence for the former was noted, with occasional individuals failing to fly after paint had been applied too liberally (accidental running due to too thin consistency). However the proportion affected in this way was well below 1% and only four deaths were positively identified as a direct result of capture and marking (two due to handling damage and two from heat stress). Furthermore, we recaptured a number of individuals that had been more liberally covered with paint than was intended.

We think that our capture and marking activities were unlikely to have significantly affected the overall population. Recapture rates were good, and the resulting frequency distribution of longevity (Fig. 3) largely mirror those for other taxa e.g. the southern damselfly *Coenagrion mercuriale* (Charpentier) (Jenkins 1995) and various moths (Craik 1979).

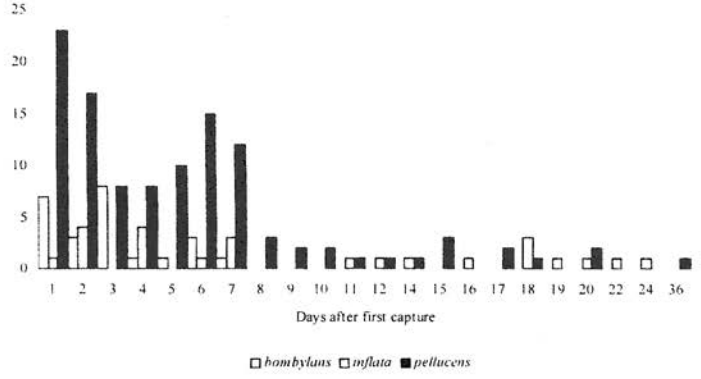


Fig. 3. Number of individuals of *Volucella* recaptured vs. the number of days after the original capture and marking.

Our experience suggests that the marking techniques work adequately with most individuals being readily recognised and the paint spots showing little sign of wear during the study period. However, there were occasions when it was difficult to identify a marked individual unambiguously, either because the paint had run when it was applied or seemed to have abraded, and in one case this might have led to a mistake in recording longevity. In this instance, a specimen caught on 18 July bearing slight traces of white paint was interpreted as representing a specimen marked on 14 June. The mark on this individual was restored and it was caught again two days later. However, as Fig. 3 shows, this suggests exceptional longevity and it is possible that the original markings may have abraded leading to misidentification.

Estimating Population Size, Longevity and Mobility

An estimate of the population of each species using Schnabel's method (Krebs 1989) is shown in Table 1, which summarises the numbers of individuals of each species marked, released and recaptured during the study period. Numbers were not constant, with variation arising from the length of time sampling and conditions on the day.

Table 1. Summary of number of *Volucella* marked, released and recaptured. MSD = Marked the Same Day. MP = Marked on a Previous occasion. Population estimated using Schnabel's method (Krebs 1989).

Visit	Date	Man-hours sampling	*V. bombylans*			*V. inflata*			*V. pellucens*		
			New captures	Recaptures		New captures	Recaptures		New captures	Recaptures	
				MSD	MP		MSD	MP		MSD	MP
1	Jun-07	8	18	2	0	28	2	0	43	0	0
2	Jun-08	10	35	5	3	8	0	1	14	2	4
3	Jun-09	4.5	10	1	8	28	1	2	21	3	6
4	Jun-11	6	12	0	10	13	0	4	25	0	12
5	Jun-14	6.75	12	1	5	17	1	0	51	1	3
6	Jun-22	5.75	3	0	0	34	5	2	38	2	2
7	Jun-25	4.25	2	0	0	18	2	9	48	4	2
8	Jun-28	9	4	0	0	13	0	5	62	7	10
9	Jun-29	8.5	1	0	0	4	0	2	55	6	17
10	Jul-05	7	0	0	0	7	0	1	51	5	5
11	Jul-07	2.5	0	0	0	4	0	0	30	2	4
12	Jul-11	6.75	0	0	0	8	0	0	73	10	2
13	Jul-13	12	0	0	0	0	0	1	89	17	8
14	Jul-17	2	0	0	0	0	0	0	3	1	0
15	Jul-18	4.75	0	0	0	0	0	0	26	14	14
16	Jul-19	6	0	0	0	0	0	0	35	17	26
17	Jul-20	3	0	0	0	0	0	0	9	6	16
18	Jul-24	1.5	0	0	0	0	0	0	1	0	4
19	Jul-26	3	0	0	0	0	0	0	8	0	4
20	Jul-27	2.5	0	0	0	0	0	0	4	0	1
Total		113.75	97	9	26	182	11	27	686	97	140
Estimated population (with 95% confidence interval)			200 (142, 339)			656 (468, 1097)			1963 (1669, 2384)		

The UFIT procedure of POPAN-5 (Arnason *et al.* 1998) was used to estimate population parameters from the individual capture histories of flies. The most parsimonious fit was obtained using a Jolly-Dickson full model with fixed daily survival probability (N), although the option to adjust survival per unit time according to the actual intervals (number of days) between our samples was used. Various other constraints were investigated, including use of weather variables (obtained from the closest available weather station) as covariates of the daily probability of capture, but none significantly improved the fit of the model, judged by the Maximum Log-Likelihood and Akaike Information Criterion (AIC). The models did not fit well. Iterations converged poorly, backtracking occurred and many individual parameters could not to be estimated because computed estimates fell outside the permitted range. The standard errors of estimates were generally large. Fig. 4 shows the estimated population of each species on each sampling date and its 95% confidence interval. The (fixed) estimated daily survival probability N, and its standard error, are also shown for each species.

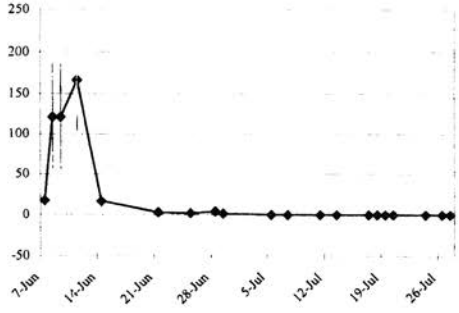
Estimation of population parameters from mark-recapture data involves certain assumptions about the behaviour and population dynamics of the species. Schnabel's method assumes a "closed population"; i.e. that there is no immigration or emigration from the sampling area. There is perhaps some reason to believe that this may be so for *Volucella inflata*, where specimens have only been observed within the wood itself, but there is no evidence at present that this is so for *V. bombylans* or *V. pellucens*, which can be found at many locations in the immediate vicinity. The Jolly-Dickson model does not assume that the population is closed, but does make the following assumptions:

1. Every individual (marked or unmarked) has the same probability of being captured in the i^{th} sample.
2. Every marked individual has the sample probability of surviving from the i^{th} to the $(i+1)^{th}$ sample.
3. Individuals do not lose their marks.
4. Marks are not overlooked at capture.
5. Sampling time is negligible in relation to the intervals between samples.

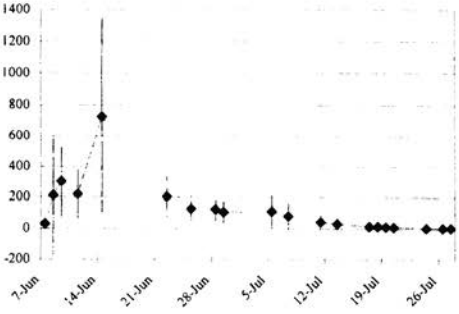
If, as we suggest, males are territorial, then the first assumption is probably violated since individuals holding a territory near our sampling stations are more likely to be captured. This would tend to increase the number of recaptures of marked individuals, increase the proportion of marked individuals estimated to be in the population and therefore decrease the estimate of population size. Our sampling method probably violates the last assumption since many hours were spent on each sampling day catching and marking flies, as shown in Table 1, but the interval between samples was often as little as one day. However, it is probably the second assumption that causes the most problems for the application of these techniques to short-lived animals such as hoverflies. Fig. 3 suggests that adults may live around two to three weeks. To produce the adult flight period observed, especially in *V. pellucens*, new flies must be emerging from puparia over much of this period. If the chance of survival of an individual is age-dependent, then the chances of survival of marked individuals from one sample to the next will depend on their age at capture. In turn, this will depend on the amount of emergence occurring around the sampling date, which is likely to vary considerably between sampling dates.

Fig. 4. Population estimates with 95% confidence intervals vs. sampling date. The estimate of daily survival (φ) with its standard error is also shown for each species.

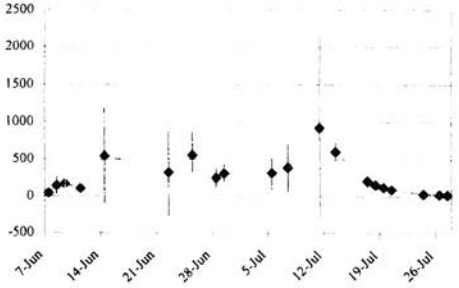
Volucella bombylans $\varphi = 0.7137$ (0.2444)



Volucella inflata $\varphi = 0.8534$ (0.0270)



Volucella pellucens $\varphi = 0.7654$ (0.0127)



Estimates of "dilution" from the model (i.e. recruitment into the population by either immigration or emergence of new individuals) were particularly prone to large standard errors (often larger than the estimate) or inability to make any estimate (the computed value was less than zero). Consequently, rapid recruitment to the adult population makes these techniques difficult to apply in estimating populations of *Volucella*.

Even though the degree of confidence in the estimates of population size is poor, it is clear that populations of both *Volucella inflata* and *V. pellucens* are substantial. In the case of *V. inflata*, this raises important questions about the differences between perceived habitat availability and the actual numbers of individuals supported within relatively small woodlands. *V. inflata* larvae have been found in sap runs (Rotheray 1994) and adults have been observed on several occasions hovering close to a very large sap run on a horse chestnut where the two rides meet in Old Sulehay Forest (marked as "Chestnut Meet" on Fig. 1). But, there are few obvious sap runs elsewhere in the wood and relatively few big trees capable of supporting substantial sap runs. There must therefore be many more than we have found to date, and it seems probable that inconspicuous or small sap runs are utilised. Much more work is needed to investigate this aspect of the ecology of *V. inflata*.

In the case of *Volucella pellucens*, whose larvae inhabit the nests of the ground-dwelling wasps *Vespula vulgaris* (Linnaeus) and *V. germanica* (Fabricius) (Stubbs and Falk 2002), the estimated size of the population (Table 1) is equally noteworthy. The numbers of larvae that inhabit individual wasp nests seem to vary considerably, but counts of up to 60 puparia have been recorded (Graham Rotheray *pers. comm.*), corroborated by reports of 60 to 70 larvae from nests in Germany (F. Gilbert *pers. comm.*). This suggests that more than 30 wasp nests are needed to support the estimated population of *V. pellucens*. This estimate is surprising given the small numbers of social wasps seen within the wood during the 2003 season, samples of which during the survey revealed the presence of *Vespula rufa* (Linnaeus), *Dolichovespula media* (Retzius), *D. norvegica* (Fabricius) and *D. sylvestris* (Scopoli) in addition to worker hornets *Vespa crabro* Linnaeus. Of these, only *V. rufa* nests have been known to support *Volucella* larvae (F. Gilbert *pers. comm.*). Moreover, just one ground-nesting wasp nest was found in the wood in 2003 (reported by N. Owen *pers comm.*).

Fig. 3 gives an indication of the longevity of marked individuals. Although most recaptures were of individuals marked only a few days previously, some individuals of both *V. pellucens* and *V. inflata* were recaptured up to 24 days after marking. As explained above, one remarkably long-lived individual of *V. pellucens* may have resulted from a misinterpretation of its markings. No individuals of *V. bombylans* were recaptured more than 7 days after marking but, as demonstrated in Fig. 3, we missed much of the emergence period of this species. Records from wider recording indicate that *V. bombylans* first appeared in the region on 25 May (Southey Wood TF1003) and had almost entirely disappeared by the last week of June. Therefore little significance can be attributed to this result.

The numbers of individuals recaptured on the same day, as they were marked varied considerably. In the case of *V. pellucens* it was not uncommon to mark a specimen and for it to resume hovering in its original territory just seconds later. However, the level of recruitment to the population seems to be an important factor, as it was observed that recapture rates were lower on days when absolute numbers were high. Marked *V. bombylans* also tended to return to the same patch from which they were caught and same-day recaptures were frequent. However, *V. inflata* seemed to leave the area when released and same-day recaptures were rare.

The significance of sunshine in relation to hoverfly activity is well established (Gilbert 1985) and in a woodland situation this has a variety of implications, as the position of the sun has a

bearing upon the proportion of any glade or ride in full sunlight at any time of day. Illumination of nectar sources changes with time of day, meaning that some locations are important at differing times. The impact of these changes on our ability to capture hoverflies throughout the day was considerable. It gives the overall impression of changing levels of activity over any one day, but the data are confused by the time needed to move sampling stations and the relative importance of a particular location to different species.

All three species exhibit mobility within the woodland itself, and some individuals travelled up to 500m between the two rides that were sampled. Recaptures of *V. pellucens* males suggest that there is a change in behaviour as the season progresses with individuals tending to be more mobile and likely to visit flowers early on in the flight period, but tending to stay in the same place once they have established hovering territories.

At this stage, it is not possible to draw more detailed conclusions on the degree to which the population is confined to the woodland itself and to what extent there is dispersal into the wider countryside. Further studies, drawing on a larger number of volunteers, will be necessary to investigate this aspect of the population dynamics.

Observed behaviour in *Volucella* species

Volucella bombylans males habitually sit at rest on sunlit foliage from which they make aggressive forays to investigate insect activity in the vicinity. Observations of marked males over short periods suggested that they tended to return to a small number of perches in close proximity and to defend their immediate vicinity from others of the same species. A variety of plants provided territorial stations, but burdock *Arctium lappa* and bramble growing in larger openings in the main ride were particularly favoured in Old Sulehay Forest. Recapture records (Table 2) suggest that most individuals remained close to the place at which they were first captured i.e. they were captured at the same station or had moved within the ride. There were only five occasions on which an individual had moved between the north-south and east-west ride when recaptured.

Table 2. Behaviour of male *V. pellucens*.

Visits	Consecutive captures of the same individual							All captures						
	At the same station		Moved within ride		Moved between rides		Total	Visiting flowers		Resting on foliage		Hovering		Total
	No.	%	No.	%	No.	%		No.	%	No.	%	No.	%	
7-14 Jun	17	40%	14	33%	12	28%	43	77	63%	4	3%	41	34%	122
22-29 Jun	28	50%	23	41%	5	9%	56	9	5%	1	1%	161	94%	171
7-13 Jul	65	84%	7	9%	5	6%	77	44	18%	2	1%	205	82%	251
17-27 Jul	139	98%	3	2%	0	0%	142	20	8%	2	1%	219	91%	241
Total	249		47		22		318	150		9		626		785

The behaviour of male *Volucella inflata* was closely linked to flower visiting by females. Unlike male *V. bombylans* and *V. pellucens*, *V. inflata* males actively searched out females and did not appear to defend a territory; they flew fast through and around nectar sources such as dogwood and bramble. During our study, this behaviour was helpful in the early stages, as dogwood is relatively snag-free, making captures relatively straightforward; later on it became extremely difficult to make captures from bramble patches and this may have influenced the results considerably. Table 2 shows that the majority of recaptured males were taken at the same sampling station as the original capture, but that females were more likely to have moved, with 55% of recaptures at a different sampling station.

Male *V. pellucens* are well known for their territorial behaviour (Stubbs and Falk 2002), hovering at heights of between 1.5 and 6 metres within sunny woodland glades. Initial observations suggest random distribution of male territories along the rides, but detailed recording reveals that the numbers of males defending territories is closely linked to the location of preferred nectar sources. Indeed, as the season progressed, the numbers of males at different locations varied markedly as available nectar sources changed. Also, it is noteworthy that early in the season, males were frequently taken nectaring at dogwood, yet later on a few were noted at other nectar sources such as brambles. Territorial behaviour was largely observed during periods of sunshine and the effects of cloud-cover were rapid. When the sun went behind a cloud, hovering males disappeared very quickly and reappeared just as quickly when the sun came out again. It was difficult to observe where they went, but the few observations we were able to make indicated that they perched in nearby tree foliage at a height of around 4m upwards.

It appeared that marked individuals defended the same territory for more than one day, and towards the end of the study, we noted individuals defending the same location for lengthy periods on consecutive days. Table 2 shows that males of *V. pellucens* were far more likely to be recaptured at the same sampling station than the other species. However, Table 3 shows that males were more mobile during the early part of the season. There is also a noticeable trend for males to be caught more frequently visiting flowers early in the season, whilst virtually all captures were of hovering males later on. Females were more likely to be recaptured at a different sampling station throughout the season. Towards the end of the season, few males were noted beyond a small area at the western end of the east-west ride.

Table 3. Movements by individuals that were captured more than once.

Species	Sex	Average distance moved (m)	Consecutive captures of the same individual						Total
			At the same station		Moved within ride		Moved between rides		
Bombylans	female	84	5	50%	4	40%	1	10%	10
	male	122	8	32%	13	52%	4	16%	25
Inflata	female	136	4	36%	6	55%	1	9%	11
	male	64	17	65%	6	23%	3	12%	26
Pellucens	female	164	4	36%	5	45%	2	18%	11
	male	55	249	78%	47	15%	22	7%	318
Total		66	287	72%	81	20%	33	8%	401

Despite the level of recording effort, we only witnessed possible mating by *V. inflata and V. pellucens* on one occasion each, and did not note any example in *V. bombylans*. In both examples the male aggressively coupled with the female for just a few seconds whilst in flight.

All three *Volucella* species appear to be closely linked to the presence of nectar sources. The main ride within Old Sulehay Forest is being brought back into management and a number of new ride scallops have been created. At the moment, these are poorly vegetated and *Volucella* were largely absent, which emphasises the importance of continuity of ride vegetation and in particular nectar sources such as bramble and hogweed. Where woodlands have remained unmanaged for many years, the loss of ground flora and flowering scrub is clearly significant in relation to the behaviour and distribution of *Volucella*. Prior to this study the importance of both dogwood and privet may have been under-recognised. There is a need to take account of these nectar sources and the importance of retaining them throughout the cycle of ride management.

Acknowledgements
We thank Nick Owen (Warden of Old Sulehay Forest) and Henry Stannier of Bedfordshire, Cambridgeshire, Northamptonshire and Peterborough Wildlife Trust for permission to record within the study site. We also thank Dr John Hopkins and his son David who gave assistance with catching *Volucella* on a number of occasions. Finally, we thank Dr Francis Gilbert for providing advice on the approach to marking that we employed and for his helpful comments on an earlier version of this manuscript.

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Egle lyneborgi Ackland & Griffiths, 2003 (Diptera, Anthomyiidae) new to the British list and _E. inermis_ Ackland, 1970 is a good species - The continuing revision of Nearctic Anthomyiidae by G. C. D. Griffiths (2003. *Flies of the Nearctic Region*. Volume VIII. Cyclorrhapha II (Schizophora: Calyptratae) Part 2, Anthomyiidae, No **14,** 2289-2484, published in June, 2003) has resulted in changes to the British list of the genus *Egle* Robineau-Desvoidy, 1830.

Egle lyneborgi Ackland & Griffiths, 2003 (in Griffiths 2003: 2357) was described from both Nearctic and Palaearctic material. It is widespread across the Holarctic Region and was previously mixed in collections with *E. minuta* (Meigen). These species can only be reliably identified by examination of the male genitalia so their distribution at present is only known from dissected specimens. In Britain *E. lyneborgi* is so far recorded only from Berkshire and Oxfordshire, but it is probably widely distributed although less common than *E. minuta*.

In the same work (Griffiths 2003: 2349) the name *Egle inermis* Ackland, 1970 is restored for the species listed as *bicaudata* (Malloch, 1920) in the British checklist. *E. bicaudata* is not a British species *Egle inermis* was described from British material (type locality Cambridgeshire). Verner Michelsen (*pers. comm.* to DMA) examined Nearctic specimens (holotype?) of *bicaudata*, and stated that it was an earlier name for *inermis*, and therefore *inermis* (which also occurs in the Nearctic) was listed as a junior synonym of *bicaudata* (Ackland, D.M. 1989. *Entomologist's monthly Magazine* **125,** 211-230). Griffiths (2003: 2349) examined the holotype of *bicaudata*, and reported that it was a species distinct from *inermis*. In Britain *E. inermis* is probably widespread in fens and places where sallow *Salix* occurs. It is recorded so far from Vice Counties 22, 23, 29 and 31, but is probably local but widespread in suitable localities (e.g. ancient fens where old established sallows are found) - **MICHAEL ACKLAND,** 24 The Moors, Kidlington, Oxon OX5 2AJ

Some rare Tachinidae (Diptera) from the Forest of Dean, Gloucestershire – While surveying Highnam Wood Nature Reserve for the RSPB in 2003, I was fortunate enough to come across three very scarce tachinids, all with RDB2 status. Most unusual was a female *Redtenbacheria insignis* Egger, 1861 knocked from the foliage of a sycamore tree on 1 October. According to R. Belshaw (1993. Tachinid flies, Diptera: Tachinidae *Handbooks for the Identification of British Insects* **10**(4a(i), 1-169) it was known from just four British specimens from three sites in Devon (Plympton, 1934), Hampshire (Lyndhurst, 1894 and 1897) and Gloucestershire (Parkend, 1945); the latter record is also in the Forest of Dean, several miles to the south of Highnam Wood.

On 29 April some larvae of *Dictenidia bimaculata* (Linnaeus, 1761) (Tipulidae) were collected from under bark; a male of *Admontia seria* (Meigen, 1824) emerged from one of these on 22 May 2003. In Gloucestershire *A. seria* is only known from two old records near Bristol in 1949 and 1951 (Belshaw *op. cit.*).

A male of *Wagneria gagatea* Robineau-Desvoidy, 1830 was swept at this site on 11 June. This species seems to be very rare in Gloucestershire, with a single record from Olveston in 1922 (Audcent, H.L.F. 1950. Bristol Insect Fauna, Diptera. *Proceedings of the Bristol Naturalists Society* 28(1), 45-132) – **DAVID GIBBS,** 6 Stephen Street, Redfield Bristol BS5 9DY

Dipterists Digest 2004 **10**, 85-87

Hoverfly (Diptera, Syrphidae) flower visit records from Old Sulehay Forest, Northamptonshire in 2003

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Summary
Records of hoverflies visiting flowers in the rides of Old Sulehay Forest and in the adjacent Stonepits Quarry are reported. These records provide an indication of the range of woodland flowers visited, and of the relative importance of particular flowering plants in Northamptonshire limestone woodland.

During studies of *Volucella* species at Old Sulehay Forest (TL0698) (Ball and Morris 2004) detailed notes were retained of flower visits by the three principle species: *V. bombylans* (Linnaeus, 1758), *V. inflata* (Fabricius, 1794) and *V. pellucens* (Linnaeus, 1758). Additional notes were made for flower visits by other hoverflies from both the woodland and the adjacent "Stonepits Quarry" (TL0598).

The records assembled provide an initial impression of the relative importance of woodland ride flowers. Table 1 lists the flower visits by *Volucella*: it emphasises the importance of dogwood *Cornus sanguinea*, which flowers in early June, and bramble *Rubus fruticosus* agg.. which flowers throughout June and July, but becomes proportionally more important to *Volucella* species after dogwood has ceased flowering. Comparatively large numbers of *Volucella inflata* were also noted visiting wild privet *Ligustrum vulgare*, which flowers for about a week after dogwood has finished flowering. It is also noteworthy that whilst very few hoverflies are noted at elderberry *Sambucus nigra*, *V. inflata* is an occasional visitor (also reported by Morris 1998).

Table 1. Number of observations of *Volucella* species at flowers

	V. bombylans	*V. inflata*	*V. pellucens*
Arctium lappa great burdock	-	-	3
Cirsium arvense creeping thistle	1	-	10
Cirsium vulgare spear thistle	-	-	1
Clematis vitalba traveller's-joy	-	-	3
Cornus sanguinea dogwood	9	78	69
Gallium mollugo hedge bedstraw	-	-	1
Heracleum sphondylium hogweed	-	-	12
Ligustrum vulgare wild privet	-	16	-
Prunella vulgaris selfheal	-	1	-
Rubus fruticosus agg. bramble	9	25	145
Sambucus nigra elderberry	-	4	-
Silene alba white campion	1	-	-
Torilis japonica stone parsley	-	-	2
Valeriana officinalis common valerian	-	1	11

Dogwood is a typical woodland-edge shrub on calcareous soils that can occur in dense stands. As far as we are aware, its importance as a nectar source for hoverflies may have been hitherto overlooked. Table 2 illustrates the range of hoverflies that visit this nectar source. Perhaps the most remarkable record is that of the wetland hoverfly *Parhelophilus frutetorum* (Fabricius), which occurred in high numbers (>50) on a number of occasions. These records indicate the level of mobility exhibited by *P. frutetorum* bearing in mind that the potential breeding grounds lie some 400 metres away, reinforcing reports of high mobility in *P. frutetorum* by Stubbs and Falk (2002).

This list, which includes a substantial number of scarce saproxylic species, suggests that dogwood is likely to be an important nectar source in woodlands on calcareous soils, especially as it flowers just after hawthorn (*Crataegus* spp.). Unlike hawthorn, however, its importance is unlikely to have been recognised by nature reserve managers; indeed it may be seen as a problem in some localities as it can be invasive into grasslands.

Table 2. Hoverflies recorded at Dogwood *Cornus sanguinea*

Chrysotoxum cautum (Harris, 1776)	Occasional
Epistrophe eligans (Harris, 1780)	Occasional – towards the end of flight period
Episyrphus balteatus (De Geer, 1776)	Frequently but not in large numbers
Cheilosia illustrata (Harris, 1780)	Once only
Chrysogaster solstitialis (Fallén, 1817)	Once only
Myolepta dubia (Fabricius, 1805)	Once only
Eristalis intricarius (Linnaeus, 1758)	Frequently
Eristalis pertinax (Scopoli, 1763)	Frequently
Helophilus pendulus (Linnaeus, 1758)	Frequently
Myathropa florea (Linnaeus, 1758)	Frequently
Parhelophilus frutetorum (Fabricius, 1775)	Abundant
Volucella bombylans (Linnaeus, 1758)	Frequently
Volucella inflata (Fabricius, 1794)	Frequently
Volucella pellucens (Linnaeus, 1758)	Frequently
Criorhina asilica (Fallén, 1816)	Frequently
Criorhina berberina (Fabricius, 1805)	Frequently
Criorhina floccosa (Meigen, 1822)	Frequently

The following flower visits comprise the additional records accumulated both at Old Sulehay Forest and Stonepits Quarry in 2003. Numbers of records are given in parentheses and records marked * are from Stonepits Quarry (TL0598).

***Clematis vitalba*, traveller's-joy**: *Episyrphus balteatus* (1)
***Hypericum perforatum*, perforate St Johnswort**: *Chrysotoxum cautum* (1)
***Bryonia dioica*, white bryony**: *Episyrphus balteatus* (2)
***Reseda luteola*, weld**: *Eupeodes luniger* (Meigen, 1822) (1*)
***Filipendula ulmaria*, meadowsweet**: *Episyrphus balteatus* (1), *Eristalis intricarius* (1)
***Rubus fruticosus* agg., bramble**: *Episyrphus balteatus* (1), *Leucozona lucorum* (Linnaeus, 1758) (1), *Chrysogaster solstitialis* (1), *Eristalis horticola* (De Geer, 1776) (1), *Eristalis pertinax* (1), *Mallota cimbiciformis* (Fallén, 1817) (1), *Myathropa florea* (2), *Criorhina berberina* (1)

***Hedera helix*, ivy**: *Volucella inanis* (Linnaeus, 1758) (1)
***Pastinaca sativa*, wild parsnip**: *Chrysotoxum bicinctum* (Linnaeus, 1758) (2*), *Episrophe grossulariae* (Meigen, 1822) (1*), *Episyrphus balteatus* (1*), *Cheilosia illustrata* (Harris, 1780) (1), *Cheilosia proxima* (Zetterstedt, 1843) (1*), *Cheilosia soror* (Zetterstedt, 1843) (1*), *Myolepta dubia* (1), *Riponnensia splendens* (Meigen, 1822) (1*), *Pipizella viduata* (Linnaeus, 1758) (1*), *Syritta pipiens* (Linnaeus, 1758) (1*)
***Heracleum sphondylium*, hogweed**: *Melanostoma mellinum* (Linnaeus, 1758) (1), *M. scalare* (Fabricius, 1794) (1), *Chrysotoxum bicinctum* (1), *Episyrphus balteatus* (2), *Leucozona glaucia* (Linnaeus, 1758) (1), *Leucozona laternaria* (Muller, 1776) (1), *Leucozona lucorum* (1), *Cheilosia illustrata* (4), *Chrysogaster solstitialis* (4), *Eristalis pertinax* (2), *Myathropa florea* (1)
***Torilis japonica*, stone parsley**: *Cheilosia illustrata* (1), *Episyrphus balteatus* (1), *Leucozona glaucia* (1), *Meliscaeva cinctella* (Zetterstedt, 1843) (1), *Chrysogaster solstitialis* (1)
***Origanum vulgare*, wild marjoram**: *Eristalis intricarius* (1*), *Volucella pellucens* (1*)
***Ligustrum vulgare*, wild privet**: *Epistrophe grossulariae* (1) *Myathropa florea* (1), *Criorhina berberina* (1)
***Scrophularia nodosa*, common figwort**: *Cheilosia variabilis* (Panzer, 1798) (1)
***Campanula latifolia*, giant bellflower**: *Episyrphus balteatus* (1)
***Valeriana officinalis*, common valerian**: *Episyrphus balteatus* (1)
***Arctium lappa*, greater burdock**: *Melanostoma scalare* (1), *Episyrphus balteatus* (1), *Eristalis intricarius* (1), *Ferdinandea cuprea* (Scopoli, 1963) (1)
***Cirsium vulgare*, spear thistle**: *Episyrphus balteatus* (1)
***Tamus communis*, black bryony**: *Cheilosia illustrata* (1)

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Morris, R.K.A. 1998. *Hoverflies of Surrey*. Surrey Wildlife Trust, Pirbright, Surrey.

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Palaeodocosia flava (Edwards, 1913) (Diptera, Mycetophilidae) new for Gloucestershire

– While surveying Ban-y-gor Wood and Lancaut Nature Reserve in the Wye Valley, Forest of Dean for the Gloucestershire Wildlife Trust in 2003 I swept three specimens of this striking fungus gnat. It is only known in Britain from five records, all in southern England between 1914 and 1990. None are from Gloucestershire but it was taken in Leigh Woods, Somerset in 1949 and The Doward, Herefordshire in 1910 (Falk, S. and Chandler, P.J. in preparation. *A review of the scarce and threatened flies of Great Britain; Nematocera and Aschiza not covered by Falk (1991)*. JNCC). A single male was found in Ban-y-gor Wood on 30 May 2003 and one of each sex taken at Lancaut on 28 May 2003 – **DAVID GIBBS,** 6 Stephen Street, Redfield Bristol BS5 9DY

The Hellebore leaf-miner *Phytomyza hellebori* Kaltenbach (Diptera, Agromyzidae) in Central Southern England - *Phytomyza hellebori* was added to the British list by A.E. Stubbs (2000. The hellebore leaf-miner *Phytomyza hellebori* Kaltenbach (Diptera, Agromyzidae) new to Britain, *Dipterists Digest* (*Second Series*) **7,** 33-35). He found it in the Peterborough area and had exhibited it at a meeting of the British Entomological and Natural History Society in January 2000. At the following meeting Andrew Halstead announced that mines had also been found at Royston, Hertfordshire (TL348408, V.C. 29 = Cambridgeshire) and at the Royal Horticultural Society's Garden, Wisley, Surrey (TQ063583) (2001. BENHS Indoor Meetings. 8 February 2000. *British Journal of Entomology and Natural History* **14,** 48). Later in the same year further records from the East Midlands were provided by R.C. Welch (2000. *Phytomyza hellebori* Kaltenbach (Dip.: Agromyzidae), a recent addition to the British fauna: further records in East Northamptonshire, Huntingdonshire and Cambridgeshire. *Entomologist's Record and Journal of Variation* **112,** 163-166). Welch (*op. cit.*) mentioned that David Henshaw had recorded it in mid Essex and this referred to Ongar and Chelmsford (D. Henshaw *pers. comm.*).

In all cases mines were on Stinking Hellebore (*Helleborus foetidus*) (Ranunculaceae) and it was unknown whether it was an overlooked native or a recent colonist. Andrew Halstead noted that in February 2000 mines were present on *H. foetidus* throughout the RHS Garden, Wisley, suggesting that it had been established there for some time. He also noted that this was the only *Helleborus* species in the Garden that showed any sign of the leaf miner. It now also appears to be widespread on this plant in central southern England, lending support to the view that it is a recent arrival.

This note was originally to report the mines in Berkshire and Oxfordshire. However, just before Christmas 2002, a discussion ensued on the UKMoths e-forum, an online discussion group on the Worldwide Web. Although it caters primarily for lepidopterists, many members have an active interest in leaf-miners and it was suggested that examining Hellebores might provide light relief over the holiday period. The resulting mini-survey produced several records in central southern England, but surprisingly none from elsewhere, despite the fact that the group has over 300 members throughout the country. A request for negative records produced no replies.

The following records, all mines on overwintering leaves of *Helleborus foetidus* (Stinking Hellebore), are believed to include the first for vice-counties 12, 13, 22 and 23 (MWS = the author, PB = Paul Boswell, SP = Sarah Patton). Rob Edmunds also informed me that he has known it at Fleet, Hampshire for a couple of years:

5 January 2002, Thatcham, Berkshire (V.C. 22), SU518669, a few mines on a single plant in private garden (MWS)

1 April 2002, Goring, Oxfordshire (V.C. 23), SU598810, a few mines on roadside plantings (MWS)

6 January 2003, Highdown Gardens, Ferring, West Sussex (V.C. 13), TQ098043, 50+ mines (SP)

7 January 2003, Garden of Hobbes, Greywell, North Hampshire (V.C. 12), SU721517, many mines (PB)

I am grateful to Paul Boswell and Sarah Patton for permission to quote their records and to Andrew Halstead and David Henshaw for further comments – **MALCOLM STOREY,** 43 Berry's Road, Upper Bucklebury, Reading RG7 6QI

Dipterists Digest 2004 **10**, 89-94

Melanostoma wollastoni sp. n. (Diptera, Syrphidae) from Madeira, Portugal

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Summary

Inspection of type material has revealed that *Syrphus babyssa* Walker, 1849 is in fact conspecific with *Xanthandrus parhyalinatus* (Bigot, 1884), **syn. n.** The name *babyssa* Walker has since 1908 been applied to a hitherto undescribed species of *Melanostoma*, known since 1855 when it was first collected by Thomas Wollaston. This paper gives the first formal description providing a valid name for this species, which is hereby named *Melanostoma wollastoni* **sp. n.**

Introduction

Walker (1849) described a species of Syrphidae from the Island of Madeira and named it *Syrphus babyssa*. The holotype female is held in The Natural History Museum, London. This specimen is labelled as follows: red-edged circular 'Holotype' label; green-edged circular 'Type' label (typically used on Walker type specimens); circular white label with 'Madeira' written on one side and the accessions number "45 90" on the other; and two other labels, both hand-written by E.E. Austen at a later date, one 'Madeira 45.90' and the other 'Syrphus babyssa Wlk'.

Becker (1908) misidentified the Madeiran black *Melanostoma* as *babyssa*, giving a detailed description of the female. Following Becker's concept of *babyssa*, Frey (1939) repeated this misidentification, and provided the first description of the male. Although neither had seen the type, both Becker and Frey treated *babyssa* as a separate species from *Xanthandrus parhyalinatus*. Subsequent authors, such as Frey (1949), Gomes and Báez (1990) and Barkemeyer (1999), repeated this misidentification. Thompson (1980) examined the type of *babyssa* and discovered that it should be placed in *Xanthandrus*. As a consequence, Dirickx (1994) and Carles-Tolra (2002) listed two species of *Xanthandrus* as occurring on Madeira, i.e. *parhyalinatus* and *babyssa*, but only one species of *Melanostoma*, i.e. *mellinum* (Linnaeus, 1758). There have been no published records of any other *Melanostoma* species occurring on the island.

Inspection of the holotype of *babyssa* revealed that Thompson (1980) was correct. Walker's specimen is a female and is conspecific with type material of *Xanthandrus parhyalinatus*, as stated by Peck (1988). *X. parhyalinatus* is therefore a junior subjective synonym of *X. babyssa*. This means that the Madeiran melanic *Melanostoma* does not have a valid name and the current paper has been written to rectify this situation. Thomas Vernon Wollaston (see Salmon and Wakeham-Dawson 1999) captured a specimen at Cruzinhas, Madeira in 1855. The specimen is held in The Natural History Museum, London and is hereby designated as the holotype of *Melanostoma*

wollastoni **sp. n.** The full list of type material is provided below, using the following abbreviations: AWD = A. Wakeham-Dawson; AMcC = A. McCullough; AMFA = A.M.F. Aguiar; JTS = J.T. Smit; ICLAM = the collection of Laboratório Agrícola da Madeira. All capture locations are on Madeira.

***Melanostoma wollastoni* sp. n.**

Male

Face entirely shining black, with a shining metallic blue-black hue (this more obvious in living specimens), slightly dusted; mostly flat in profile except for prominent median tubercle and slightly protruding mouth-edge (Fig. 1). Frons rather densely haired, the hairs mainly black. Eyes bare, contiguous for distance slightly longer than length of ocellar triangle (Fig. 2), angle of eyes slightly more than 90 degrees; antenna with basal two segments brownish, third segment mostly blackish but with conspicuous pale yellow-orange area basoventrally on inner surface. Arista black, thickened in basal third, with microscopic hairs much shorter than width of arista.

Thorax and scutellum: shining black with a metallic bronze hue (this more obvious in living specimens), covered with fine pale tawny-yellow hairs, scutellum with some longer and darker hairs around margin. Legs: colour varies between specimens with some almost totally dark, others almost totally fulvous. Coxae black, the apex often lighter, trochanters yellowish-brown. Front and middle legs with femora black, but orange-yellow at the extreme base and on the apical fourth to third (sometimes up to half), tibiae mostly orange-yellow except for diffuse dark median band, tarsi mostly broadly yellowish on the basal two or three segments. Hind leg darker, with orange-yellow restricted to basal third of tibia and extreme apex of femur, sometimes the basal two tarsal-segments brown-orange. Wing almost entirely covered in microtrichia, except for the 1st costal cell and a small area at the base of the 1st and 2nd basal cells, stigma brownish-yellow; wings with a brownish tinge.

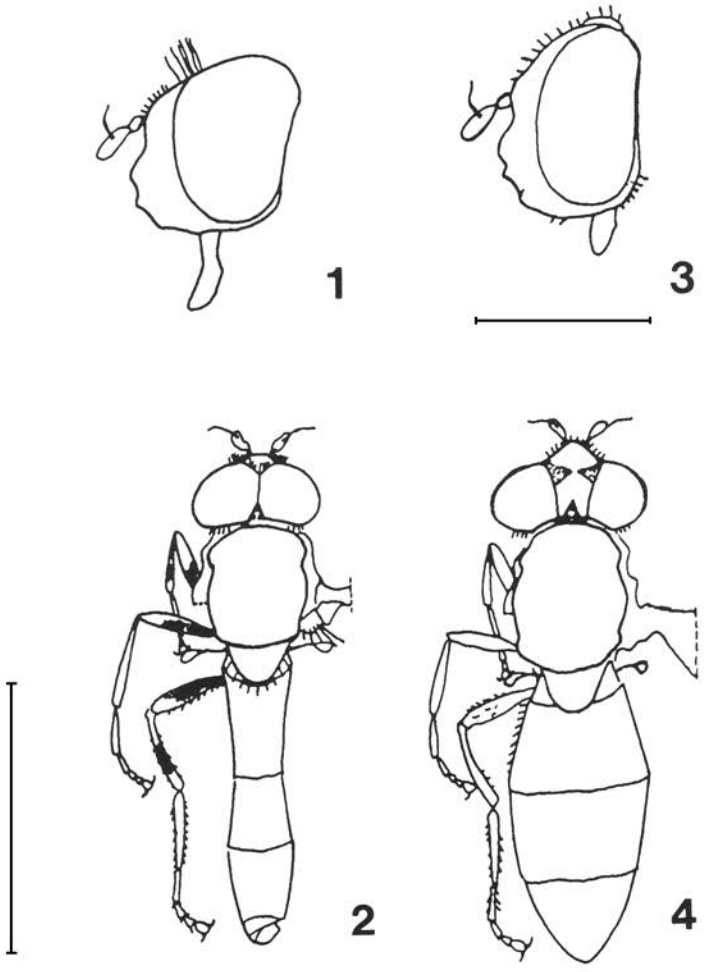
Abdomen: rather elongated in appearance, similar to *Melanostoma scalare* (Fabricius, 1794) (Fig. 2); narrowed at junction of tergites 2 and 3, but widening again posteriorly, broadest at junction of tergites 3 and 4 (abdomen more parallel-sided in living specimens); tergites entirely black, somewhat shiny, the front corners of tergites 3 and 4, and to a lesser extent on tergite 2, narrowly and inconspicuously bronze-metallic (best seen when viewed from behind). Sternites entirely shiny black. Tergites covered with fine pale and erect hairs basally and laterally, and with short dark appressed hairs medially and posteriorly. Genitalia: parameres with two widely spaced spine-like projections visible when viewed dorsally (Fig. 5).

Length: Body: 6.5 – 9.0mm. Wing: 6.0 – 8.5mm.

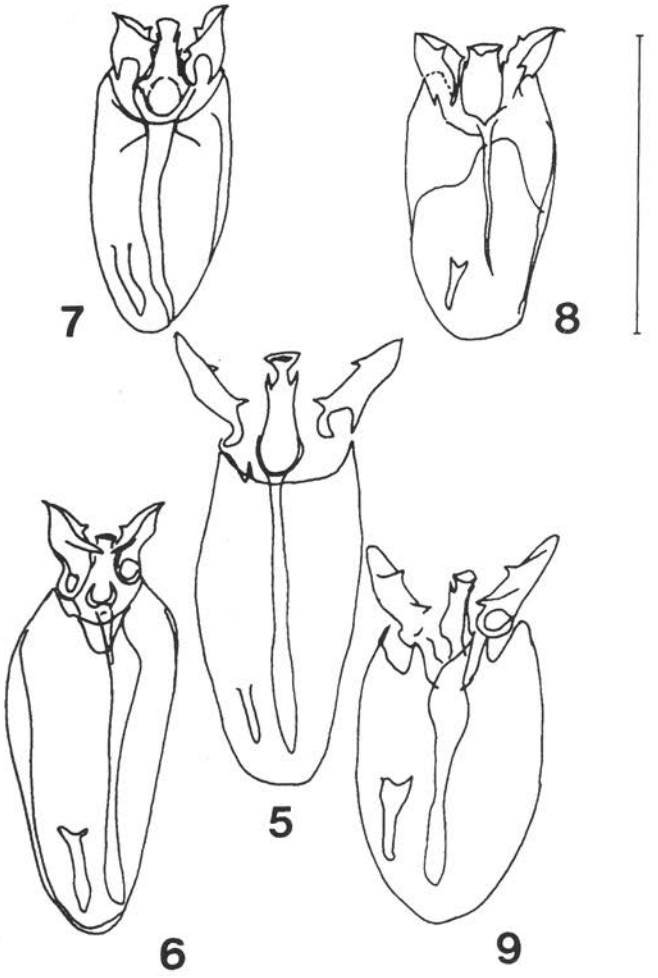
Female

Head: frons with two lateral triangular areas of grey dusting when viewed from above, similar to *M. scalare* although less conspicuous (Fig. 4), often nearly joining in centre of frons, and more conspicuous in some specimens than others. Frons with shorter hairs than in male, these all black. Face in profile with median tubercle less prominent than in male (Fig. 3).

Thorax covered with short hairs and less densely than in male. Scutellum with some longer, darker hairs on margin, but which are shorter than in the males. Legs entirely fulvous, except for the coxae, which are black; the legs can be darker in some specimens. Hind leg a little darker, with some (inconspicuous) black shading on the top third of the femur and a diffuse dark median band on the top half of the tibia. All tarsi darkened towards the apex, the hind tarsus sometimes completely dark.



Figs 1-4. ***Melanostoma wollastoni*** **sp. n. 1, male head, lateral view; 2, male, dorsal view with wings, and legs on right, removed; 3, female head, lateral view; 4, female, dorsal view with wings, and legs on right, removed (scale bars = 1mm for heads, 5mm for dorsal views).**



Figs 5-9. Male hypandrium of *Melanostoma* species: 5, *M. wollastoni* sp. n.; 6, *M. scalare* (Fabricius) (Europe); 7, *M. mellinum* (Linnaeus) (Europe); 8, *M. dubium* (Zetterstedt) (Europe); 9, *M. incompletum* Becker (Tenerife, Canary Islands) (dorsal views; scale bar = 0.2 mm).

Abdomen widest at base of tergite 3 then tapering posteriorly (Fig. 4), entirely black, somewhat shining. Sternites completely shining black.

Material examined. Holotype ♂, Cruzinhas, Madeira, 1855, leg. T.V. Wollaston, coll. Natural History Museum, London.

Paratypes: Rabaçal, 2♂, 11-25.v.1998; 1♂, 3♀, 8-15.vii.2002 leg. & coll. AWD; 1060 m, 3♂ (no. 687), 1.vi.1996, leg. & coll. AMFA; Portela, 2♂, 7.iii.2001 leg. & coll. AWD; Ribeiro Frio-Portela, 1♂, 2♀, 8-15.vii.2002 leg. & coll. AWD; 2♂, 1♀, 10-17.iv.2003 leg. AMcC, AWD & AMFA, coll. Natural History Museum, London; Encumeada, 1♂, 8.x.2001 leg. & coll. AWD; 1♀, 16.iv.2003, leg. AMcC, AWD & AMFA, coll. Natural History Museum, London; 1♀ (no. 423), 990m, 23.ix.1989, leg. & coll. AMFA; 970-1007m, 1♀ (no. 0821), 27.v.1989, leg. AMFA, coll. ICLAM; Chão de Ribeira, Seixal, 19♂, 6♀, 19.v.1998; Fajã de Nogueira, 4♂, 1♀, 10.iii.1998, leg. & coll JTS; 600-800m, 1♂ (no. 0370), 7.v.1993, leg. AMFA, coll. ICLAM; Achada do Garamacho, 1♂ (no. 423), 23.ix.1989, leg. & coll. AMFA; Levada do Risco, 1045m, 2♂ (no. 688), 1.vi.1996, leg. & coll. AMFA; Queimadas, Santana, 880m (no. 1272), 1♀ (no. 1272), 26.viii.1999, leg. & coll. AMFA; 880m, 1♀ (no. 0822), 26.viii.1999, leg. AMFA, coll. ICLAM; Chão dos Louros, 850m, 1♂ (no. 0820), 2.vi.2000 leg. AMFA, coll. ICLAM.

Additional material (all leg. and coll. JTS): Chão da Ribeira, Seixal, 1♂, 1♀, 20.iii.1998; 2♂, 21.iii.1998; 1♂, 3♀, 15.iv.1998; 2♂, 3♀, 23.v.1998; Loreto, 1♂, 5.v.1998; Montado do Barreiro, 1♂, 15.v.1998; Portela, 2♂, 17.vii.1997; 2♂, 3♀, 19.vii.1997; 1♀, 31.vii.1997; Rabaçal, 1♂, 5♀, 20.vii.1997; 2♂, 2♀, 21.v.1998; Ribeira de Santa Luzia, Corujeira, 1♂, 2♀, 24.v.1998.

Etymology. This species is named after Thomas Vernon Wollaston (1822-1878) who collected the male specimen that we have designated as the holotype of *M. wollastoni*.

Diagnosis (comparison with other Western Palaearctic *Melanostoma* species)

M. wollastoni is one of five *Melanostoma* species known from the Western Palaearctic. The others are *M. dubium* (Zetterstedt, 1838), which is an alpine species, *M. incompletum* Becker, 1908, which is endemic to the Canary Islands, and two widespread species *M. mellinum* and *M. scalare* (Fabricius, 1794). The abdomen of *M. wollastoni* is always completely black in both sexes, while the other Western Palaearctic *Melanostoma* usually has yellow markings on at least some of the abdominal tergites, though melanic specimens of these sometimes occur. The area of yellow on *M. dubium* is variable and is usually much reduced or may even be absent, and the areas of yellow on *M. incompletum* are consistently reduced in comparison to *M. mellinum*. Of these five species, only *M. mellinum* and *M. wollastoni* have been found on Madeira.

In its general structure, *M. wollastoni* is most similar to *M. scalare*, both sharing an elongate appearance. *M. dubium*, *M. mellinum* and *M. incompletum* have a different appearance, which is mainly due to their having a proportionately shorter abdomen than either *M. wollastoni* or *M. scalare*. However, the structure of the male genitalia suggests a different grouping (Figs 5-9): *M. dubium* (figured from a Swiss specimen in the Natural History Museum collection), *M. scalare* and *M. mellinum* have parameres with spine-like projections close together, while *M. wollastoni* and *M. incompletum* have these projections much more widely separated.

Ecology

This species is endemic to Madeira, where it is found in forested areas, mainly in the endemic laurisilva and *Erica* forest and to a lesser degree in the *Acacia/Eucalyptus* Plantation forests (see Press and Short 1994; Capelo *et al.* 1999). It flies between March and November at altitudes between 500 and 1500m above sea level (Smit *et al.* in preparation). The adults are present at forest-edges and in forest clearings often sitting on leaves up to three metres above the ground, but rarely in direct sunlight. They have been observed feeding on yellow flowers of *Ranunculus* species (including *R. cortusifolius*), Asteraceae and Apiaceae. The immature stages of this species are unrecorded.

Acknowledgements

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A contribution to breeding site record data for blackflies (Diptera, Simuliidae) in Ireland

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Summary
Record data are presented for a collection of Simuliidae (blackflies) from Ireland formed in 1970-1972. The material originates from 106 sampled sites and includes specimens of 21 out of the 27 blackfly species and species complexes known from Ireland. The total of 5250 specimens includes 437 adult flies of which nearly all were reared and most are accompanied by their pupal exuviae. An Appendix provides data on adult flies in the National Museum of Ireland.

Introduction
The broad outlines of the simuliid fauna of Ireland have been established for some time and checklists have been provided by Ashe *et al.* (1998) and Crosskey in Chandler (1998); a comprehensive picture of the distribution of each member has still, however, to be built up. At the present time 27 species and species complexes are known to occur in Ireland (as compared to 33 in Britain) but it seems likely that one or two additional species will be found in due course when some of the more specialised lotic habitats are rigorously prospected.

Fahy (1972) made a start on distributional recording for Ireland, using the Irish National Grid positions of the running water (lotic) breeding sites as the publication basis, and summarised his data for the drift samples that he took in various areas from Donegal to Wexford. Since then some further recording has been done, notably for County Kerry by Schröder and Schweder (1986) and by Bass (1990). However, snippets of distributional data can also be obtained from articles in the hydrobiological literature where simuliids merely featured as one of the components of the benthic invertebrate community (e.g. Dowling *et al.* 1981; Fahy 1973, 1975a and 1975b; Frost 1942) or were the subject of special biological research (Schröder 1987 and 1988), and from the old adult fly material in the National Museum of Ireland (see Appendix). Currently, projects concerned with blackflies are underway in Ireland, by Deirdre Tierney (associated with University College, Dublin) and Fionnghuala Geraghty (National University of Ireland, Galway), and these should greatly improve our knowledge of species distributions.

The present paper is intended to contribute towards a clearer picture of the occurrence of blackflies in Ireland and relates to a collection that I assembled in 1970-1972 by prospecting there personally in August 1970 and receiving material collected for me around that time by the colleagues named in the Acknowledgements (*q.v.*). The collection was based on sampling of early stages from the lotic breeding sites and comprises 4813 larvae and pupae in 80% ethanol, together with 437 pinned adults nearly all of which were reared from pupae and are accompanied by their dry pupal exuviae. (Rearing of adult flies from breeding sites was an important aspect of the collecting procedure because reliable identification of several species depends on correlation of adult with pupal characters.) The material is housed at present in the Natural History Museum, London (BMNH), but I aim to deposit a large part of it in the National Museum of Ireland.

Species list

The following 21 species and species complexes have been identified in the material. Numerals give the number of sampling sites at which the taxon was found and the total number of specimens at these sites irrespective of life stage; those are shown in the 'Breeding sites and taxa in samples' section.)

Prosimulium latimucro (Enderlein) (1/1)
Prosimulium tomosvaryi (Enderlein) (3/13)
Simulium (*Eusimulium*) *angustipes* Edwards (1/1)
Simulium (*Eusimulium*) *aureum* Fries (3/10)
[*Simulium* (*Eusimulium*) *aureum* group indet. (3/11)]*
Simulium (*Eusimulium*) *velutinum* (Santos Abreu) (3/31)
Simulium (*Hellichiella*) *latipes* (Meigen) (1/1)
Simulium (*Nevermannia*) *armoricanum* Doby & David (12/113)
Simulium (*Nevermannia*) *cryophilum* (Rubtsov) complex (30/476)
Simulium (*Nevermannia*) *dunfellense* Davies (3/10)
Simulium (*Nevermannia*) *naturale* Davies (3/22)
Simulium (*Nevermannia*) *vernum* Macquart complex (8/31)
Simulium (*Simulium*) *argyreatum* Meigen (36/1032)
Simulium (*Simulium*) *intermedium* Roubaud (48/1087)
Simulium (*Simulium*) *noelleri* Friederichs (2/7)
Simulium (*Simulium*) *ornatum* Meigen complex (36/1376)
Simulium (*Simulium*) *reptans* (Linnaeus) (20/357)
Simulium (*Simulium*) *rostratum* (Lundstrom) (4/183)
Simulium (*Simulium*) *trifasciatum* Curtis (3/26)
Simulium (*Simulium*) *variegatum* Meigen (12/292)
Simulium (*Wilhelmia*) *equinum* (Linnaeus) (12/157)
Simulium (*Wilhelmia*) *lineatum* (Meigen) (2/13)

*This entry refers to a few larvae of *aureum* group, which could not, in the absence of confirmatory life stages, be identified to species.

Breeding sites and taxa in samples

Notes: (1) Collectors' names are abbreviated as: EO = Elaine Okely, JF = Joy Farradane, JR = John Richardson, RWC = Roger W. Crosskey. (2) L = larvae, P = pupae. (3) Plus signs after sex symbols show that at least some of the adults concerned have their pupal exuviae gummed to card mounts attached to the same carrier pins as the micro-pinned flies.

ANTRIM

D293195: Stream at road crossing 1.5 km N of Carnlough, 27.vii.1970 (JR).
Simulium argyreatum (L,P), *S. ornatum* complex (L,P).

CAVAN

N415840: Stream on W side of Lough Sheelin, 27.vi-10.vii.1971 (JF).
Simulium cryophilum complex (♂+), *S. intermedium* (♀), *S. ornatum* complex (L, ♂,♀), *S. vernum* complex (♀+).

N471862: Stream at NE corner of Lough Sheelin, 27.vi-10.vii.71 (JF).
Simulium ornatum complex (L, ♂,♀).

N490857: River into Lough Sheelin at Mount Nugent, 27.vi-10.vii.1971 (JF).
Simulium equinum (♂+,♀), *S. lineatum* (L,P, ♂+,♀), *S. ornatum* complex (L, ♂,♀).

CLARE

R269912: Fergus River near Killinaboy 10 km NNW of Ennis, 27.vi-10.vii.1971 (JF).
Simulium equinum (L,P), *S. lineatum* (P), *S. ornatum* complex (L,P).

R477677: Bunratty River at Annagore Bridge near Sixmilebridge, 14.viii.1970 (RWC)
Simulium equinum (L), *S. intermedium* (L,P), *S. ornatum* complex (L,P), *S. velutinum* (L,P, ♂+) [♂ genitalia slide identity confirmation].

R480874: Headwater rivulet of Rine River 4 km N of Tulla, 14.viii.1970 (RWC).
Simulium intermedium (L,P, ♂+,♀+).

CORK

R808150: Funshion River at Ballaghaderg Bridge 2.5 km N of Mitchelstown, 8.viii.1970 (RWC).
Simulium equinum (L), *S. intermedium* (L,P, ♂+,♀+), *S. ornatum* complex (L,P), *S. reptans* (L,P, ♂+).

V816519: Adrigole and Clashduff Rivers junction at Inchintaglin Bridge 1.5 km N of Adrigole, Beara peninsula, 13.viii.1970 (RWC).
Simulium argyreatum (L,P, ♀+), *S. armoricanum* (♂+), *S. intermedium* (L,P, ♂+), *S. ornatum* complex (L,P), *S. reptans* (L,P), *S. variegatum* (L,P, ♂+).

V877585: Glengarriff River N of Crossterry Mountain, 13.viii.1970 (RWC).
Simulium argyreatum (L, ♂+), *S. intermedium* (L,P, ♂+).

V940405: Stream 1.5 km S of Durrus, base of Mizen Peninsula, 10.viii.1970 (RWC).
Simulium argyreatum (L,P), *S. armoricanum* (L), *S. cryophilum* complex (L), *S. intermedium* (L)

W068653: Stream in Gougane Barra forest reserve, 9.viii.1970 (RWC).
Simulium argyreatum L,P, ♀+), *S. armoricanum* (P), *S. cryophilum* complex (L,P).

W081650: Stream in Gougane Barra National Park, 9.viii.1970 (RWC).
Simulium argyreatum (L,P), *S. cryophilum* complex (L,P).

W095664: Stream outflow from lough at Gougane Barra, 9.viii.1970 (RWC).
Simulium intermedium (L,P, ♂+), *S. noelleri* (P), *S. rostratum* (L,P, ♂+,♀+).

W138720: Headwater cascade of Sullane River N of Ballingeary, 9.viii.70 (RWC).
Simulium argyreatum (L,P), *S. cryophilum* complex (L,P).

W140747: Headwater of Sullane River at Ballyfirmane Bridge, 9.viii.70 (RWC).
Simulium argyreatum (L,P), *S. intermedium* (L,P, ♂+,♀+), *S. ornatum* complex (♂+).

W169653: River at Kealvaugh flowing to Lough Allua 3 km SE of Ballingeary, 9.viii.1970 (RWC).
Simulium aureum group sp. (? *angustipes*) (L), *S. intermedium* (L,P), *S. reptans* (L,P, ♂,♀+).

W260740: Sullane River at Sullane Bridge 4 km W of Macroom, 9.viii.1970 (RWC).
Simulium reptans (L,P).

W362453: Argideen River at Ballaghcummer Bridge, Knockskagh, 4 km NW of Clonakilty, 8.viii.1970 (RWC).
Simulium equinum (L,P), *S. intermedium* (L,P), *S. ornatum* complex (L,P).

W809906: Bride River at Rathcormack 4 km S of Fermoy on road to Cork, 8.viii.1970 (RWC)
Simulium equinum (L,P), *S. ornatum* complex (L,P, ♂+,♀), *S. reptans* (L).

DONEGAL

G570848: Stream on mountain road to Carrick near Glencolumbkille, 26.viii.1971 (EO).
Simulium ornatum complex (L, ♀+).

G880778: Stream on Mountcharles to Donegal road 5 km W of Donegal, 26.viii.1971 (EO).
Simulium argyreatum (L,P, ♂+,♀+), *S. cryophilum* complex (L,P).

DUBLIN

O070230: Stream at Stone Cross 2 km ENE of Brittas, 11.iv.1971 (EO).
Simulium ornatum complex (L, ♂+), *S. trifasciatum* (L, ♂+), *S. vernum* complex (♀+).
O190195: Glencullen River at bridge on Glencullen to Enniskerry road, -.iv.1972 (EO).
Simulium argyreatum (♂+,♀+).
O192194: Cookstown River (Wicklow/Dublin border) at Glencullen Bridge on Glencullen to Enniskerry road, 9.iv.1971 (EO).
Prosimulium tomosvaryi (L), *Simulium argyreatum* (L,P, ♂+,♀+), *S. variegatum* (P, ♂+).

GALWAY
L580561: Stream near sea S of Claddaghduff, Connemara, 10.vii.1971 (EO).
Simulium intermedium (L,P, ♂+,♀+).
L598530: Stream at end of Sky Road W of Clifden, Connemara, 18.viii.1970 (RWC).
Simulium cryophilum complex (P), *S. ornatum* complex (L,P).
L622570: Stream by Cleggan to Streamstown road, Connemara, 11.vii.1971 (EO).
Simulium intermedium (♀+).
L688567: Traheen River at Traheen Bridge, Moyard, Connemara, 16.viii.1970 (RWC).
Simulium argyreatum (L,P).
L737631: Stream at Gowlaun on Lough Fee to Tully Cross road, 16.viii.1970 (RWC).
Simulium argyreatum (L,P), *S. variegatum* (L,P).
L766586: Stream on N side of Kylemore Lough, Connemara, 18.viii.1970 (RWC).
Simulium argyreatum (L,P), *S. cryophilum* complex (L).
L778589: Stream on N side of Kylemore Lough, Connemara, 18.viii.1970 (RWC).
Simulium argyreatum (L), *S. cryophilum* complex (P, ♂+), *S. velutinum* (L,P).
L783490: Stream between Benlettery and Bengower mountains N of Ballynahinch, Connemara, 9.vii.1971 (EO).
Simulium intermedium (L,P, ♂+,♀+).
L786620: Stream on N side of Lough Fee, Connemara, 16.viii.1970 (RWC).
Simulium cryophilum complex (L,P).
L813422: Stream into Cashel Bay near Cashel, Connemara, 18.iii.1970 (EO).
Simulium intermedium (L,P, ♀+).
L824607: Bunowen River at Tullyconor Bridge on Letterfrack to Leenaun road, Connemara, 16.viii.1970 (RWC) and 11.vii.1971 (EO).
Simulium argyreatum (L) (16.viii), *S. reptans* (L) (16.viii) (♂+,♀+) (11.vii).
L825460: Stream at Garroman bridge near Recess, Connemara, 18.viii.1970 (RWC).
Simulium intermedium (L,P), *S. ornatum* complex (♀+).
L825556: Tooreenacoona River to N end of Lough Inagh, Connemara, 18.viii.1970 (RWC).
Simulium argyreatum (L,P), *S. equinum* (L,P), *S. intermedium* (L,P, ♂+,♀+), *S. ornatum* complex (L,P, ♂).
L850508: Stream into S end of Lough Inagh, Connemara, 18.viii.1970 (RWC).
Simulium intermedium (L,P, ♂+).
L887607: Stream 2 km SE of Leenaun on Maam Cross road, Connemara, 16.viii.1970 (RWC).
Simulium cryophilum complex (L), *S. intermedium* (L).
M059525: Stream near Cornamona on NW corner of Lough Corrib, 17.viii.1970 (RWC).
Simulium cryophilum complex (L), *S. intermedium* (L).

KERRY
Q502060: stream near summit of Conair (= Conor) Pass, Dingle peninsula, 12.viii.1970 (RWC).
Simulium argyreatum (L,P), *S. cryophilum* complex (L,P, ♂).
Q516139: Owennafeana River near Brandon, Dingle peninsula, 12.viii.1970 (RWC).
Simulium ornatum complex (L,P), *Simulium variegatum* (L,P).
Q545101: Glenmahoo River at Ballyduff, Dingle peninsula, 12.viii.1970 (RWC).

Simulium argyreatum (L,P, ♂+,♀+), *S. intermedium* (L,P, ♂+), S. variegatum (L,P, ♂).

Q757032: Stream near Fybagh, base of Dingle peninsula, 12.viii.1970 (RWC).
Simulium argyreatum (L,P), *S. intermedium* (L,P), *S. reptans* (L,P, ♂+).

Q764102: Stream near Curraheen on N side of Dingle peninsula, 12.viii.1970 (RWC).
Simulium argyreatum (L,P, ♂+).

Q985080: Tributary of Maine River at Dysert 3 km SW of Castleisland, 14.viii.1970 (RWC).
Simulium intermedium (L,P), *S. ornatum* complex (L,P, ♂+,♀+), *S. velutinum* (L,P, ♂+) [♂ genitalia slide identity confirmation] .

V335972: Stream at ford on coast road to Slea Head, Dingle peninsula, 12.viii.1970 (RWC).
Simulium cryophilum complex (L, ♂+).

V709863: Caragh River at Blackstones Bridge near Glencar, 12.viii.1970 (RWC).
Simulium intermedium (L,P), *S. reptans* (L,P), *S. variegatum* (L,P).

V743787: Stream S of Glencar on N side of Ballaghbeama Pass, 11.8.1970 (RWC).
Simulium cryophilum complex (L,P), *S. intermedium* (L,P).

V747855: Stream near Lough Acoose on Glencar to Killorglin road, 11.viii.1970 (RWC).
Simulium intermedium (L,P, ♂+,♀+).

V774736: Kealduff River at Gearha 15 km S of Glencar, 11.viii.1970 (RWC).
Simulium cryophilum complex (L,P), *S. intermedium* (L,P, ♂+), *S. ornatum* complex (L,P, ♂+,♀+).

V876817: Gearhameen River S of Gap of Dunloe in Macgillycuddy's Reeks, 27.vi-10.vii.1971 (JF).
Simulium equinum (L, ♀), *S. intermedium* (L,P, ♀), *S. reptans* (L,P, ♂+,♀+), *S. variegatum* (L,P, ♀).

V914802: River to upper Lough Leane at Galway's Bridge on Killarney to Kenmare road, 11.viii.1970 (RWC).
Simulium argyreatum (L), *S. variegatum* (L).

V923629: Beaurearagh River at Releagh Bridge on Kenmare to Glengarriff road, 10.viii.1970 (RWC).
Simulium intermedium (L,P), *S. reptans* (L,P).

W012857: Exit river of Lough Guitane at Finow Bridge SE of Killarney, 11.viii.1970 (RWC).
Simulium intermedium (L,P, ♂+,♀+), *S. reptans* (L), *S. rostratum* (L,P).

KILKENNY

S447333: Glory River 1.5 km SSW of Kilmaganny on road to Carrick-on-Suir, 7.viii.1970 (RWC).
Simulium aureum group sp. (? *angustipes*) (L), *S. equinum* (L,P), *S. ornatum* complex (L,P, ♂+,♀+), *S. reptans* (L,P, ♀+).

S625446: Tributary of R. Nore off Graiguenamanagh to Thomastown road 4.5 km NE of Thomastown, 7.viii.1970 (RWC).
Simulium ornatum complex (L,P, ♂+,♀+).

LEITRIM

G756427: Stream into Glencar Lough beside road from Manorhamilton to Sligo, 29.vii.1970 (JR).
Simulium argyreatum (L,P), *S. cryophilum* complex (L,P), *S. reptans* (L).

G762435: Waterfall at eastern end of Lough Glencar on Manorhamilton to Sligo road, 29.vii.1970 (JR).
Simulium argyreatum (L).

G832454: Bonet River at outlet from Lough Glenade 8 km NW of Manorhamilton, 29.vii.1970 (JR).
Simulium intermedium (P), *S. reptans* (L,P), *S. rostratum* (P).

LIMERICK

R167262: Allaghaun River at Goulburn Bridge 4.5 km E of Abbeyfeale on road to Newcastle West, 14.viii.1970 (RWC).
Simulium intermedium (L,P), *S. ornatum* complex (L,P), *S. reptans* (L,P, ♂+,♀+).

LONGFORD

N375806: Stream E of Granard, 27.vi-10.vii.1971 (JF).

Simulium cryophilum complex (♀+).

MAYO

F564043: Achill Island, stream off cliff to Keem Strand 4 km W of Dooagh, 17.viii.1970 (RWC).
Simulium armoricanum (L,P), *S. aureum* (L,P,♂+) [♂ genitalia slide identity confirmation], *S. cryophilum* complex (L,P, ♂+,♀+).

F703035: Achill Island, stream near Cashel on road to Bunacurry, 17.viii.1970 (RWC).
Simulium intermedium (L,P, ♂+,♀+)

F860335: Conifer shelter belt in grassland area W of Glenamoy, 27.iv, 16.v. and 11.vi.1971 (EO).
Simulium argyreatum (♀) (27.iv), *S. aureum* (♀) (all 3 dates), *S. cryophilum* complex (♂,♀) (27.iv), *S. intermedium* (♂,♀) (27.iv), (♀) (16.v), (♂) (11.vi).

F880361: Stream on Glenamoy to Carrowteige road, 27.iv. and 13.vi.1971 (EO).
Simulium cryophilum complex (♀+) (27.iv) and (L,P, ♂+,♀+) (13.vi), *S. dunfellense* (L,P, ♂,♀) (27.iv), *S. intermedium* (L,P, ♂+,♀+) (13.6), *S. ornatum* complex (L, ♂+,♀+) (27.4).

F890340: Near Glenamoy, 17.v., 29.x. and 30.x.1970 (EO).
Simulium aureum (♂) (29.x) [♂ genitalia slide identity confirmation], *S. cryophilum* complex (♂) (17.v), *S. intermedium* (♀) (30.x). [Non-reared swept flies.]

G023410: Glenglassra River at bridge near Belderg on Ballycastle to Belderg road, 11.vi.1971 (EO).
Simulium argyreatum (♀+), *S. variegatum* (L, ♂+,♀+).

G 2604: Foxford, 3.4.1971 (EO).
Simulium latipes (♀). [Non-reared fly, caught in car.]

L810975: Stream S of Glennaneen Bridge on Corraun peninsula, 17.viii.1970 (RWC).
Simulium naturale (?) (L), *S. intermedium* (L).

L857966: Bunnahowna River at Tooreen on Newport to Mallaranny road, 17.viii.1970 (RWC).
Simulium naturale (L,P), *S. intermedium* (L,P).

L872632: South-flowing stream from Ben Gorm, NW of Leenaun, 16.viii.1970 (RWC).
Simulium argyreatum (L,P), *S. intermedium* (♂+).

M135835: Tributary stream of Aille River at Ballyhean on Castlebar to Ballinrobe road, 17.viii.1970 (RWC).
Simulium ornatum (L,P).

MEATH

N656448: Clonhard River at Clonhard off main Dublin to Galway road, 19.viii.1970 (RWC).
Simulium equinum (L,P).

N695685: Stream near Drewston House 6 km NW of Athboy, 10.iv.1971 (EO).
Simulium equinum (L, ♀+), *Simulium ornatum* complex (L, ♂+,♀+).

N735621: Ditch-stream beside Athboy to Trim road, 10.iv.1971 (EO).
Simulium noelleri (L,P), *S. ornatum* complex (L,P, ♂+), *S. vernum* complex (L,P).

N802548: Stream on road from Trim to Laracor, 10.iv.1971 (EO).
Simulium ornatum complex (L,P, ♂+,♀+).

N812540: Stream near Laracor on Laracor to Beetive road, 10.iv.1971 (EO).
Simulium dunfellense (♂+), *S. ornatum* complex (P, ♂+), *S. vernum* complex (P).

OFFALY

N269387: Stream near Horselead on Galway to Dublin road, 19.viii.1970 (RWC).
Simulium ornatum complex (L,P, ♂+).

SLIGO

G400332: Easky river near Dromore West at crossing of Ballina to DromoreWest road, 26.iv.1971 (EO).
Simulium reptans (L,P), *S. variegatum* (L,P).

G446245: Stream from Easky Lough in Ox Mountains on Dromore West to Mullany's Cross road, 27.vi-10.vii.1971 (JF).

Simulium intermedium (♂,♀), *S. ornatum* complex (♂,♀), *S. rostratum* (♂+,♀+).

G463342: Stream near Templeboy on main road from Sligo to Ballina, 27.vi-10.vii.1971 (JF).
Simulium variegatum (L,P, ♂,♀).

G467325: Second stream near Templeboy on main road from Sligo to Ballina, 27.vi-10.vii.1971 (JF).
Simulium variegatum (L,P, ♂,♀).

TIPPERARY

R862286: Aherlow River in Glen of Aherlow, 6 km E of Galbally, 8.viii.1970 (RWC).
Simulium equinum (L,P, ♂+), *S. ornatum* complex (L,P, ♂), *S. reptans* (L,P, ♂+,♀+).

R878305: Stream in forest reserve S of Tipperary on road to Glen of Aherlow, 8.viii.1970 (RWC).
Simulium argyreatum (♂+), *S. cryophilum* complex (L,P), *S. trifasciatum* (L).

WATERFORD

X133824: Licky River at Licky Bridge near Clashmore, 27.vi-10.vii.1971 (JF).
Simulium angustipes (♀+), *S. intermedium* (♀), *S. ornatum* complex (♂), *S. reptans* (♀+).

WEXFORD

S865480: Urrin River at Durrin's crossroads near Kiltealy, 6.viii.1970 (RWC).
Simulium armoricanum (L,P), *S. cryophilum* complex (L,P), *S. naturale* (L,P), *S. ornatum* complex (L,P).

WICKLOW

N978034: King's river 4 km ESE of Hollywood on road to Laragh, 6.viii.1970 (RWC).
Simulium intermedium (L,P), *S. reptans* (cocoons).

O017015: Stream through heathland bog near Lackan village, 11.iv.1971 (EO).
Simulium cryophilum complex (L,P, ♂+), *S. trifasciatum* (L,P, ♀+), *S. vernum* (?) (L,P, ♀+).

O020187: Brittas River beside Kilbride to Brittas road, 11.iv.1971 (EO).
Simulium ornatum complex (♂+,♀+).

O056018: Annalecka Brook at Annalecka Bridge on Hollywood to Laragh road, 6.viii.1970 (RWC).
Simulium argyreatum (L,P, ♂+,♀+), *S. armoricanum* (L), *S. cryophilum* complex (L), *S. intermedium* (L,P).

O061177: Shankill River 3 km E of Kilbride, 11.iv.1971 (EO).
Prosimulium tomosvaryi (L), *Simulium argyreatum* (L,P, ♂+,♀+).

O106062: Inchavore River headstream 6.5 km S of Sally Gap, 6.viii.1970 (RWC).
Simulium argyreatum (L,P, ♀+), *S. armoricanum* (L), *S. cryophilum* complex (L,P).

O108127: Liffey River near source 2 km NW of Sally Gap on road to Kilbride, 6.viii.1970 (RWC).
Simulium argyreatum (LP), *S. armoricanum* (L), *S. aureum* group sp. (? *angustipes*) (L).

O114029: Glenmacnass River above waterfall on Laragh to Sally Gap road, 6.viii.1970 (RWC).
Simulium argyreatum (L), *S. intermedium* (L), *S. vernum* complex (L,P).

O144167: Stream from heather moor in upper Glencree valley 1.5 km S of Glencree, 9.iv.1971 (EO).
Simulium armoricanum (P).

O166155: Stream in conifer plantation in Glencree valley 2.5 km SE of Glencree, 9.iv.1971 (EO).
Simulium ornatum complex (♂+).

O182145: Stream in hazel coppice at Ballyreagh Bridge in Glencree valley, 10.iv.1971 (EO).
Prosimulium tomosvaryi (L), *Simulium cryophilum* complex (L), *S. dunfellense* (♂+), *S. vernum* complex (♂+).

S990680: Derry River at Shillelagh on Tinahely to Bunclody road, 7.viii.1970 (RWC).
Simulium ornatum complex (L,P, ♂+,♀+), *S. reptans* (L).

T055948: Avonbeg River at point above youth hostel in Glenmalur, 6.viii.1970 (RWC).
Simulium argyreatum (L).

T085917: Carrawaystick Brook below Kelly's Lake near junction with Avonbeg River, 2.v.1971 (EO).

Prosimulium latimucro (L), *P. tomosvaryi* (L), *Simulium vernum* complex (L,P, ♂+,♀+).

T110962: Lugduff Brook at confluence with Upper Lake at Glendalough, 4.viii.1970 (RWC).
Simulium argyreatum (L), *S. armoricanum* (L,P, ♂+), *S. cryophilum* complex, (L,P), *S .intermedium* (P).

T110964: Exit stream from Upper Lake at Glendalough, 4.viii.1970 (RWC).
Simulium armoricanum (L), *S. intermedium* (L,P, ♂+).

T125996: Glenmacnass River at ford 4 km NW of Laragh on road to Sally Gap, 6.viii.1970 (RWC).
Simulium argyreatum (L,P), *S. armoricanum* (L,P), *S. intermedium* (L,P).

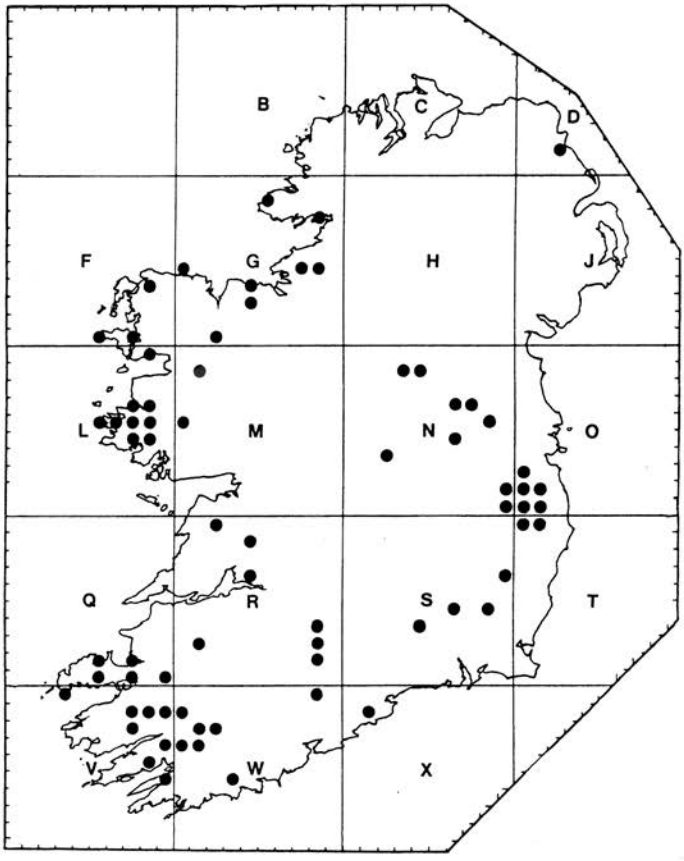
T131933: Stream NW of Rathdrum near Knockrath on Laragh to Glenmalur road, 3.viii.1970 (JR).
Simulium cryophilum complex (L).

Synopsis of the records on 10 km square basis

Species and complexes are alphabetical irrespective of subgeneric affiliation. The number of 10 km squares concerned is 71 and their positions are shown by the map in Fig.1.

Prosimulium latimucro - O21, T09.
Prosimulium tomosvaryi - O01, O11, O21, T09.
Simulium angustipes - X18.
Simulium argyreatum - D21, F83, G04, G74, G87, L65, L75, L76, L85, L86, O00, O01, O10, O11, Q50, Q51, Q70, Q71, R83, T09, T19, V85, V94, V98, W06, W17.
Simulium armoricanum - F50, O00, O10, O11, S84, T19, V85, V94, W06.
Simulium aureum - F50, F83.
Simulium cryophilum complex - F50, F83, G74, G87, L55, L75, L76, L86, M05, N38, N48, O00, O10, O11, Q50, R83, S84, T19, V39, V77, V94, W06, W17.
Simulium dunfellense - F83, N85, O11.
Simulium equinum - L85, N48, N64, N66, R29, R46, R81, R82, S43, V88, W34, W89.
Simulium intermedium - F70, F83, G42, G84, L55, L65, L74, L84, L85, L86, L89, M05, N48, N90, O00, O10, Q51, Q70, Q90, R12, R46, R48, R81, T19, V77, V78, V85, V88, V94, V96, W06, W08, W16, W17, W34, X18.
Simulium latipes - G20.
Simulium lineatum - N48, R29.
Simulium naturale - L89, S84.
Simulium noelleri - N76, W06.
Simulium ornatum complex - D21, F83, G42, G58, L55, L84, L85, M18, N23, N48, N66, N76, N85, O01, O02, O11, Q51, Q90, R12, R29, R46, R81, R82, S43, S64, S84, S96, V77, V85, W17, W34, W89, X18.
Simulium reptans - G43, G74, G84, L86, N90, Q70, R12, R81, R82, S43, S96, V78, V85, V88, V96, W08, W16, W27, W89, X18.
Simulium rostratum - G42, G84, W06, W08.
Simulium trifasciatum - O00, O02, R83.
Simulium variegatum - G04, G43, L76, O11, Q51, V78, V85, V88, V98.
Simulium velutinum - L75, Q90, R46.
Simulium vernum complex - N48, N76, N85, O00, O02, O10, O11, T09.

Fig. 1. Map showing the positions of the 10 km squares of the Irish National Grid relating to the breeding site data records given in this paper.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It is my pleasure to thank Joy Farradane, Elaine Okely and John Richardson, who, during their respective visits to Ireland, collected blackfly material on my behalf; their special efforts to obtain reared adult flies are much appreciated. Special thanks go to my wife, Margaret (Peggy) Crosskey, for much help with the fieldwork while collecting in Ireland. I am greatly indebted to Dr Jim O'Connor for allowing me to borrow, and keep by me for an unconscionably long time, the simuliids of the National Museum of Ireland.

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APPENDIX

Record data for adult specimens in the National Museum of Ireland

In 1982, by courtesy of Dr Jim O'Connor, I had the loan of the Simuliidae from the National Museum of Ireland (all of them at that time wild-caught flies). The data of the specimens seen (not previously published) are as follows:

Prosimulium latimucro

1♂, 1♀, Wicklow: Glencree, v. 1908 [in collection as *hirtipes* (Fries)]

Simulium angustipes

1♂, Mayo: Hollymount, 26.ix.1922 (W. Ruttledge) [genitalia slide-mounted].

Simulium argyreatum

2♀, Wicklow: Devil's Glen, 6.iv.1924.

Simulium dunfellense

1♂, 1♀, Kerry: Rossbehy dunes, 12.ix.1981 (J.P. & M.A. O'Connor) [genitalia of ♂ slide-mounted]. 4♂ [also some ♀♀ possibly this species], Mayo: Hollymount, 26.iv.1923 (W. Ruttledge) [genitalia of 2 ♂ slide-mounted].

Simulium equinum

1♂, 1♀, Mayo: Hollymount, 1.iv.1923 (♂) and 3.iv.1923 (♀) (W. Ruttledge).

Simulium erythrocephalum

9♀, Kerry: Killarney, Tomies Wood, 15.ix.1981 (J.P. O'Connor).

Simulium intermedium

1♀, Kerry: Killarney, Tomies Wood, 15.ix.1981 (J.P. O'Connor).

Simulium latipes (syn. *subexcisum*)

1♂, Wicklow: Rocky Valley (no other data) [specimen determined as *subexcisum* by F.W. Edwards and with its genitalia in a balsam droplet on a celluloid mount attached with the pinned specimen].

Simulium noelleri

1♀, Dublin: Raheny Ponds, iv.1894.

Simulium ornatum complex

1♂, Antrim: on railway train between Ballymoney and Ballycastle, iv.1921 [genitalia on mount with specimen]. 2♂, 1♀, Kildare: Ponsonby Bridge, Grand Canal, 14.xi.1981 (J.P. & M.A. O'Connor). 4♂, 4♀, Mayo: Hollymount, 24.ix.1922 (1♂), 7.x.1922 (1♀), 24.iii.1923 (1♀), 25.iii.1923 (2♀), 26.iii.1923 (1♂), 30.iii.1923 (1♂), 4.iv.1923 (1♂) (W. Ruttledge). 2♀, Meath: Glenlowe. Oberstown, Tara, on horse, 15.iii.1981 (Ms O'Keefe).

Simulium variegatum

1♂, 2♀, Clare: Burren, River Caher, 17.vii.1981 (J.P. & M.A. O'Connor).

Simulium velutinum

1♂, Kildare: Ponsonby Bridge, Grand Canal, 14.xi.1981 (M.A. & J.P. O'Connor) [genitalia slide-mounted]. 2♂, 1♀, Mayo: Hollymount, 24.ix.1922 (♂), 28.iii.1923 (♀), 30.iii.1923 (♂) (W. Ruttledge) [genitalia of all specimens slide-mounted].

Some records of *Dictenidia bimaculata* (Linnaeus) (Diptera, Tipulidae) from western Britain – Recent browsing in Stubbs (1992. *Provisional atlas of the long-palped craneflies (Diptera: Tipulinae) of Britain and Ireland.* Biological Records Centre, NERC/ITE) revealed a lack of records for the distinctive crane fly *Dictenidia bimaculata* (Linnaeus) from western Britain. Stubbs (*loc. cit.*) also commented that "this species occurs mainly in fens, but it also occurs in ancient woodland." My own experience suggests that it is widespread in the west and more associated with open wood pasture and parkland habitats.

My records are as follows:

East Cornwall (V.C. 2): Boconnoc Park (SX1459), one noted in open parkland, 24.vi.1989.

North Devon (V.C. 4): Arlington Park (SS6040), Exmoor National Park, freshly emerged on old beech (*Fagus*) tree, old parkland, 4.vi.1988.

Dorset (V.C. 9): Lewesdon Hill (ST437013), one on old split beech, ancient wood pasture, 17.vii.1984.

East Gloucestershire (V.C. 33): Cirencester Park (SP018020), one inside bathroom of house on edge of open parkland, 5.vii.1984. Rendcomb Park (SP0110), one on old beech, ancient deer park, 12.vi.1988. Queenswood Farm, Southam (SO9725), ♀ in ancient wood pasture, 26.v.1997.

Herefordshire (V.C. 36): Lower Brockhampton Dingle (SO689561), ♂ taken in wooded stream valley, 7.vi.1984; Paradise Wood (SO6856), ♀ in another section of this wooded stream valley, 11.vi.2000.

Shropshire (V.C. 40): The Hollies, Stiperstones NNR (SJ383015), ♂ recently emerged on decaying wood of ancient holly in ancient wood pasture, 5.vii.1985.

North-east Yorkshire (VC62): Castle Hill SSSI (SE586531), Duncombe Park Estate, North York Moors National Park, ♀ in process of emerging from pupa protruding from consolidated red-rot debris exposed in split of collapsed oak bough, 2.vi.2003.

Mid-west Yorkshire (V.C. 64): Laund House Oaks, Bolton Abbey Park (SE0756), Yorkshire Dales National Park, ♂ reared from pupa found beneath loose bark on dead lying oak, collected 23.v.1993, emerged 3.vi.1993.

Westmorland & North Lancashire (V.C. 69): Humphrey Head (SD3973), 26.vi.1993.

I also have one record from Co Wicklow (V.C. H20), Ireland: Glenmalure (T1090), 2 ♀ reared from pupae in oak log, collected 13.vi.1993 in a stand of mature oak (*Quercus*) trees on steep ground above a river.

Of these thirteen encounters ten are from ancient wood pasture and parkland situations, and only three from ancient woodland; none are from fen. It may be that it favours fens under the drier climate of eastern Britain – **KEITH N.A. ALEXANDER,** 59 Sweetbrier Lane, Heavitree, Exeter EX1 3AQ

Dipterists Digest 2004 **10**, 107-110

The British *Trichomyia* Haliday in Curtis (Diptera, Psychodidae), with the description of a new species

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Summary
An illustrated key to both sexes of the three species of *Trichomyia* Haliday in Curtis found in Britain is provided. *T. parvula* Szabó is new to Britain, and *T. minima* is new to science.

Trichomyia are unusual moth flies, with wood-boring larvae; the genus is of great age and many psychodids preserved as amber inclusions appear to be trichomyiines.

One consequence of this larval preference is that adults are rarely encountered in the more usual moth fly locales. They are often, however, a prominent component of tree rot-hole faunas; material reared from such situations frequently contains specimens of *Trichomyia*.

In his revision of the Palaearctic Trichomyiinae, Wagner (1982) only recorded four species, of which one is exclusively Japanese while *T. malickyi* Wagner was described from Greece. Two further European species have since been described, by Ježek (1990) and Wagner (2001), from Bulgaria and Spain respectively. Despite intensive collecting and identification of material by the author for over 20 years, no species other than *T. urbica* Haliday in Curtis has ever been encountered in Britain.

I was therefore astonished to receive British material of two further species, one being new to science, within two weeks of one another. I herewith provide a description of the new species, a key to both sexes of the (now) three species resident in Britain, and figures of the critical parts of the antennae and terminalia. I would encourage further concentrated effort on collecting material from such otherwise overlooked resources, which may well reveal a clearer association and distribution of these elusive and archaic flies.

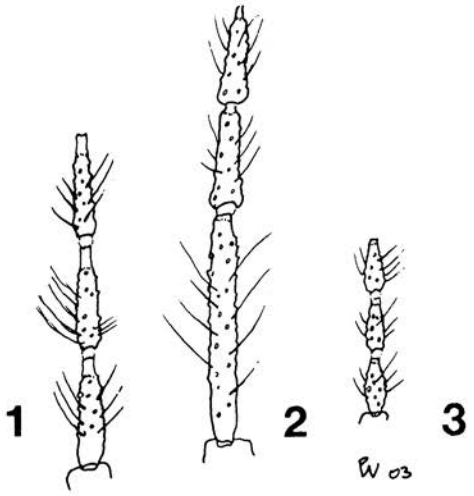
Key to British species of *Trichomyia*

1 First flagellomere at most slightly longer than second (Fig. 1, Fig. 3) 2

\- First flagellomere substantially longer (at least twice) than second. (Fig. 2). ♂ terminalia Fig. 4. ♀ cerci quadrate, Fig. 7. Wing length 2.3mm. *Trichomyia parvula* Szabó

2 Flagellomeres elongate, at least 3 x longer than wide (Fig. 1). ♂ terminalia Fig. 5. ♀ cerci Fig. 8. Large species, wing length 3.3mm. *Trichomyia urbica* Haliday in Curtis

\- Flagellomeres shorter (Fig. 3). ♂ terminalia Fig. 6. ♀ cerci Fig. 9. Small species, wing length 1.6mm. *Trichomyia minima* sp. n.



Figs 1-3. Antennal flagellomeres 1-3 of *Trichomyia* species. 1, *T. urbica*; 2, *T.parvula*; 3, *T.minima*.

***Trichomyia parvula* Szabó, 1960**

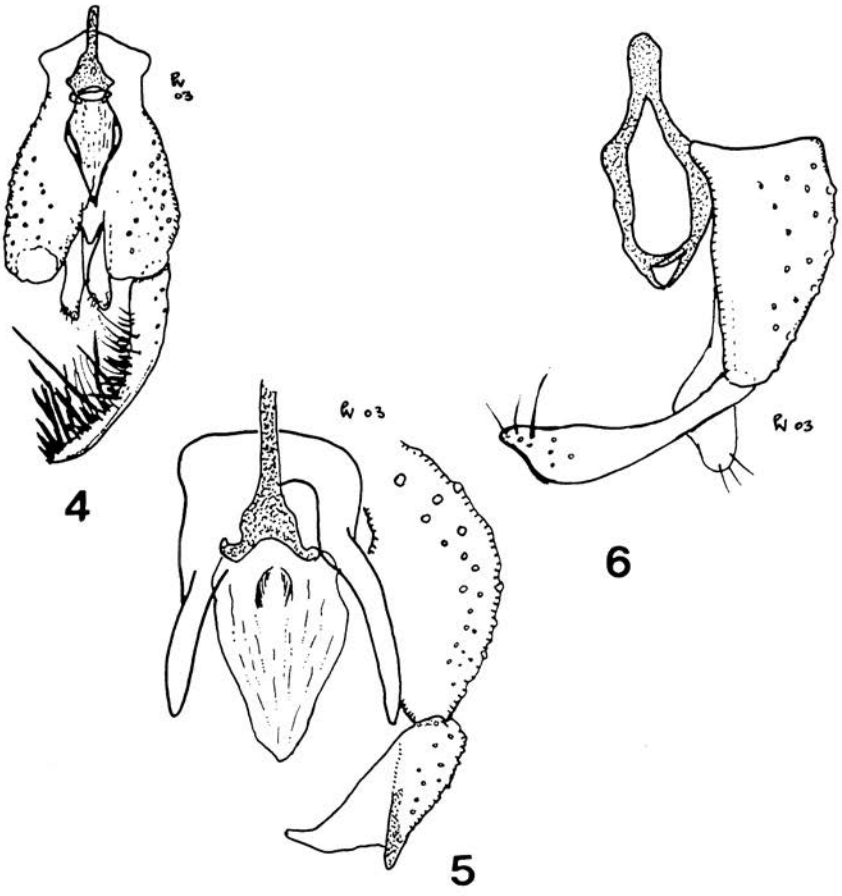
This species was described originally from a solitary male from Hungary (Szabó 1960). Wagner (*op. cit.*) was able to refer to four other specimens from Germany. The species is unrecorded elsewhere in Europe. The highly distinctive male basistyles with numerous spines are recognisable even without slide mounting. The length and extent of these spines and the shape of the basistyle differs slightly in the British material, the majority of which was obtained from horse chestnut (*Aesculus*) rot-holes.

Material examined: 4 ♂ 1 ♀, ENGLAND, Herefordshire, Moccas Park. Water trap or emergence trap, 6.v-1.vii.2002 or 20.vii.2002, leg. A. Godfrey.

***Trichomyia minima* sp. n.**

A very small, pale species – no details of vestiture, as presumably lost in alcohol when collected.

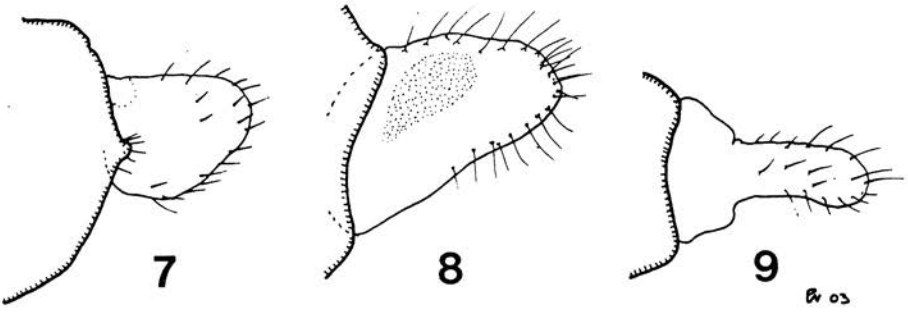
Male. Head: eyes separated, no eye bridge. Scapes close together, separated by less than one facet-width, inserted between eyes. Pedicel spherical, as long as scape. Flagellomeres 1-12 of similar size, each with a pair of basally inserted ascoids. Other flagellomere(s) missing (see female). Palpus 3-segmented, basal segment twice as long as following ones, with basal depression (presumably normally carrying sensilla, as in *T. parvula*). Thorax low humped, with no distinctive features. Genitalia: inverted type. Basistyles greatly expanded distally, with many fine setae. Dististyles apparently absent, aedeagus apparently with two curved arms, apically bifid.



Figs. 4-6. Male terminalia of *Trichomyia* species. 4, *T. parvula*; 5, *T. urbica*; 6, *T. minima*.

(The imprecision here is regrettable but necessary, as the genitalia appear to have suffered slight distortion in preparation).

Female. In all respects similar to the male. One antenna is complete and carries 13 flagellomeres, so it would appear that the male lacks only the apical one. Cerci much longer than wide, distinctly bowed. Abdomen filled with eggs, obscuring all other details.



Figs 7-9. Female cerci (lateral) of *Trichomyia* species. 7. *T. parvula* ; 8. *T. urbica* ; 9. *T. minima*.

Type material. Holotype ♂, ENGLAND, Buckinghamshire, Burnham Beeches (The Moat, SU946856), Malaise trap, 5-31.viii.1996, leg. J.W. Ismay. Paratype ♀, same data as holotype, but Pumpkin Hill (SU943848), leg. J.W. Ismay. Both specimens slide-mounted in author's collection, to be deposited in an appropriate institution in due course.

Etymology. As the smallest of the known British species, *minima* is an appropriate epithet.

Comments. Both Malaise traps were sited in the vicinity of ancient beech trees (*Fagus sylvatica*), several decayed trees with rot holes being available in close proximity in both cases.

Acknowledgements

Andy Godfrey diligently separated all the psychodids from his Moccas Park survey and kindly sent them to me. John Ismay sorted thousands of psychodid specimens from 75 Malaise trap samples which ultimately revealed the presence of *T. minima* in two of them. Peter Chandler immediately recognised that the material of *T. minima* he had mounted, although scanty, was not *urbica* (which was present in numbers in several of the Burnham Beeches samples) and thus something special. He is to be congratulated. Rüdiger Wagner confirmed (on the basis of photographic evidence) that the species was undescribed.

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Dipterists Digest 2004 **10**, 111-113

Additions to the British moth fly fauna (Diptera, Psychodidae): *Pericoma sziladyi* Szabó and *Saraiella consigliana* (Sara)

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Summary
Records of two species of Psychodidae new to the British fauna are given, with indications of key characters and figures of the male genitalia.

The publication of an identification guide to the fauna of a country should never be viewed as the last word on any group. It is merely a statement of knowledge at the moment of publication, and with the passage of time and (hopefully) an increase in interest and ease of identification, further species will be added.

So it has proved with the psychodid fauna of the British Isles. At the time of its appearance, the author's key to moth flies (Withers 1989) detailed a fauna comprising 89 species. Scarcely a year has gone by since without the need to record at least one species as additional to that tally, and it is once again a most pleasant task to record two more additions to the fauna, one of these adding a most unexpected new genus, bringing the total to 98.

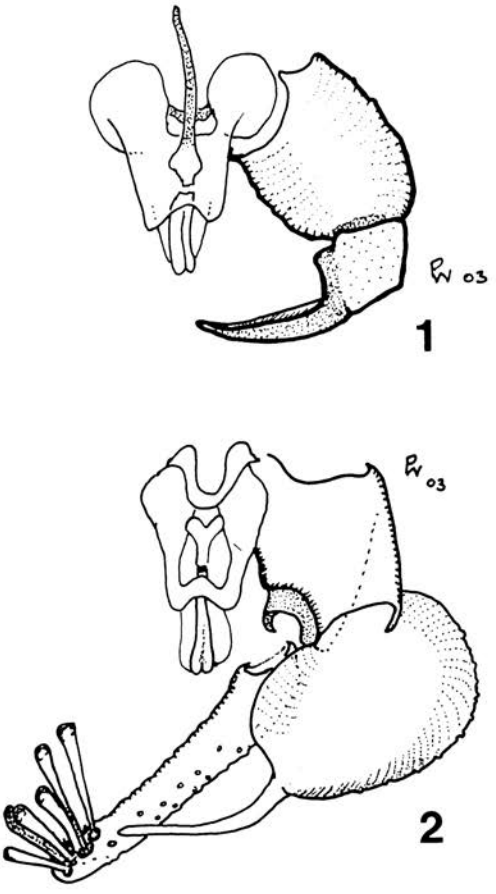
***Pericoma (Pneumia) sziladyi* Szabó, 1960**

This species already features in the 1998 Checklist, but has not been formally published as an addition to the fauna. Many species of *Pericoma sensu lato* are superficially similar and accurate identification is often only possible by reference to the structures of the male genitalia. *P. sziladyi* is distinguished by the angular base to the apical part of, and the apparent fold along, the shaft of the gonostylus (fig. 1). Szabó (1960) in his description cited 11 retinacula, but the solitary British specimen has only ten. This may well be normal variation, but will in any event cause specimens to run to couplet 9 in my key (Withers 1989) where it is clear that the absence of a forked aedeagus in the present species precludes its attribution to *crispi* Freeman. The species has not apparently been recorded anywhere else in Europe since its description.

Material examined. WALES, Denbighshire, Hafod Wood (North Wales Naturalists Trust reserve) (SJ0068), 24.v.1994, 1 ♂, leg. P.J. Chandler.

***Saraiella consigliana* (Sara, 1953)**

Larvae of the genus *Saraiella* Vaillant, 1973 are one of the characteristic components of the fauna of trickling rock-faces in alpine localities. These *Pericoma*-like moth flies have distinctively adapted larvae, which cover themselves with accretions of calcareous material, presumably for protection against predation. It was thus surprising to be sent material for identification that proved to be a species of this genus from Great Britain, not normally associated with alpine localities. That said, I have taken this species in distinctly lowland areas in France (Withers 2004), so perhaps the association with calcareous soils is the crucial feature here.



Figs 1-2. Male terminalia. 1, *Pericoma sziladyi* Szabó; 2, *Saraiella consigliana* (Sara).

In Gloucestershire *Saraiella* was found in broad-leaved woodland on the steep limestone slopes of the Wye Valley. Lancaut is west facing while Ban-y-gor is north facing; the woodland floor is cool and shaded with many areas strewn with moss covered boulders and both woods are backed by sheer limestone cliffs. There is little surface water other than small springs issuing close

to the river, and in the summer even trickles down the cliff-face were not noticed. The Hampshire site is a small area of dry broad-leaved woodland adjacent to a quarry, which may provide more humid conditions in the more sheltered parts of the chalk exposure. The Yorkshire site is woodland on magnesian limestone.

S. consigliana cannot be mistaken for any other species currently on the British list. Specimens will run in the key to genera easily to *Pericoma,* but it will be noticed that the retinacula are widely spaced on the apex of the cercopod, and are apically expanded (a useful spot characteristic for all *Saraiella*) and the almost spherical gonostylus (Fig. 2) has a thin apical extension.

Material examined. ENGLAND, Gloucestershire, Forest of Dean, Ban-y-gor Wood nature reserve (ST5496), 11.ix.2002, 1 ♂; 12.ix.2002, 3 ♂, 3 ♀, leg. D. Gibbs; Gloucestershire, Forest of Dean, Lancaut nature reserve (ST5396), 5.ix.2002, 5 ♂, 2 ♀, leg. D. Gibbs; Hampshire, Rotherfield Park, woods by quarry (SU6931), 2.x.2002, 1 ♂, leg. P.J. Chandler. South Yorkshire (V.C. 63), Pot Ridings Wood (SE5200 and SE5300), 19.ix, 30.ix and 7.x.2003, leg. A. Godfrey.

Acknowledgements

My best thanks, as always, to the select band of dipterists who continue to send me interesting material; Peter Chandler has had a long history of providing additions to the fauna, so it is particularly pleasant on this occasion to thank Dave Gibbs and Andy Godfrey as well. Thanks are also due to the Gloucestershire Wildlife Trust who own Ban-y-gor and Lancaut Woods and to Sir James Scott, the owner of Rotherfield Park, who respectively commissioned the survey work at these sites, and to Jonty Denton for enabling Peter Chandler to participate in the latter survey.

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Amiota variegata (Diptera, Drosophilidae) new for Gloucestershire –

While surveying Ban-y-gor Wood and Lancaut Nature Reserve in the Wye Valley, Forest of Dean for the Gloucestershire Wildlife Trust in 2003, I swept three specimens of this distinctive drosophilid. One male was found in Lancaut on 28 May and two males taken in Ban-y-gor Wood on 30 May 2003. Apart from an undated record from Dorset previous records appear to be confined to the New Forest, Hampshire (Falk, S. and Ismay, J.W. in preparation. *A review of the scarce and threatened flies of Great Britain; Acalyptratae*. JNCC.). Even at the New Forest it is exceedingly localised and rare with a number of records for unspecified locations between 1904 and 1934; more precisely it was recorded from Brockenhurst in 1904 and 1977 and Mark Ash Wood in 1989. At Brockenhurst on 10 September 1977, Peter Chandler (*pers. comm.*) found it by the Oberwater in numbers at sap exudations on oaks *Quercus*, attacked by the Goat-moth *Cossus cossus*, an association also recorded in the case of some of the older records. He also swept a male at Mark Ash Wood on 24 June 1989 – **DAVID GIBBS,** 6 Stephen Street, Redfield Bristol BS5 9DY

Flies (Diptera, Syrphidae) trapped by 'The Cruel Plant' - When Dana and Prue Towner bought a plant of the 'White Bladder Flower of Brazil' (*Araujia sericifera*, family Asclepiadeceae) they soon discovered why it was also called the 'Cruel Plant'. When this half-hardy plant produced a proliferation of flowers in their conservatory at Manaccan in Cornwall, they noticed that a large proportion (one in three) of the flowers contained a dead fly, some even having three in a single bloom. On attempting to remove the insects, it was found that the long tongue with which the nectar was being extracted had become trapped, being held in a vice like grip by the very mechanism designed for efficient pollination.

The reason for this non-adaptive behaviour - of no advantage to the plant, and calamitous for the flies - was eventually found. According to A. von M. Kerner and F.W. Oliver (1904. *The Natural History of Plants*. Gresham Publishing Co., London., first published in 1897 and translated from the German of by F.W. Oliver), in its own country *A. sericifera* is normally visited by bumble-bees, but where it has been introduced into other parts of the world, moths and butterflies are attracted by its sweet-smelling, tubular flowers and, unacquainted with the mechanism of these plants, they become trapped in the slit-like notches which are present between the anther-wings. The result of their struggles to free themselves results only in the proboscis becoming more firmly fixed, and they die a lingering death. Victims listed by Kerner and Oliver (*op. cit.*, for Italy) included the Silver-Y Moth *Autographa gamma*, the Spurge Hawkmoth *Hyles euphorbiae* and the Large White Butterfly *Pieris brassicae*.

This plant seems to be quite rare in this country (although it will even grow out of doors in Cornwall) so records of its insect victims are also necessarily rare. The examples at Manaccan in 1998 included three specimens of *Autographa gamma* as well as hundreds of the long-tongued hoverfly, *Rhingia campestris* Meigen. One count, when 300 flowers were open, showed that a hundred of them each contained a fly, and the plant continued to flower for three months. As fresh carrion, they attracted wasps (*Vespula vulgaris*) that collected the flies for their grubs, leaving behind the heads.

J.L.S. Keesing, biologist at the Royal Botanic Gardens, Kew, wrote (*in litt.* 17.vii.1998) that although they have the species at Kew, they have no record of it having ever flowered. The only record known to him of its insect-catching behaviour was by F.G. Preston (1955. *Araujia sericofera* [sic] and its method of trapping moths. *The Gardeners' Chronicle* for May 21, 1955) who quoted verbatim the words in Kerner and Oliver (1893), adding that he had "at different times, seen a number of moths trapped in this way in the flowers of specimens of *A. sericofera* [sic] growing in the Temperate House at the Botanic Garden, Cambridge, where it usually flowers and fruits freely". A search kindly made by Peter Maggs, Assistant Librarian, University of Exeter, of the entire Biosis database from 1985-1998, contained several references to this species (concerning its embryogenic properties) but no mention of its insect-trapping behaviour. Although the pollination techniques of the family Asclepiadeceae (which include holding insects for a while before release) are discussed by M. Procter and P. Yeo (1973. *The Pollination of Flowers*. New Naturalist No. **54**. London: Collins) they do not mention *A. sericifera*.

It would be interesting if know if this is phenomenon has been observed by entomologists –

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Dipterists Digest 2004 **10**, 115-116

Pelatachina tibialis (Fallén) (Diptera, Tachinidae) new to Ireland and *Nephrotoma crocata* (Linnaeus) (Diptera, Tipulidae) confirmed as an Irish species

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Summary
Pelatachina tibialis (Fallén, 1810) is recorded as new to Ireland. The inclusion of *Nephrotoma crocata* (Linnaeus, 1758) in the list of Irish Diptera is confirmed based on a specimen taken in 2003.

In May 2003 I visited Ireland, primarily to participate in a Coleopterists' field meeting. In addition to recording aquatic Coleoptera, I took the opportunity to collect a few specimens of Diptera from around the periphery of some of my sample sites.

On 24.v.2003 I took a specimen of a medium sized Tachinid fly at Ballinduff Turlough (Co. Galway, M457079). This was identified as *Pelatachina tibialis* (Fallén) using Belshaw (1993). Although the species is widespread in Britain, this is the first record of this species from Ireland. *P. tibialis* will parasitise a range of Lepidopterous hosts, though the species is primarily a parasite of the larvae of Nymphalidae. The specimen was taken flying about a patch of nettles at the base of a sunny stone wall, nettles being the preferred larval foodplant of a number of the more common Nymphalid species.

On 25.v.2003 I caught a female specimen of *Nephrotoma crocata* (Linnaeus) at the northern end of Lough Graney (Co. Clare, R559949). The insect was flying along a narrow strip of sparsely vegetated sandy ground. This small strip of 'beach' sits between the shallow lake margins and a block of coniferous plantation, some of which had been recently felled.

In Britain, this large black and yellow cranefly is accorded RDB3 status (Falk 1991). Stubbs (1992) provided a distribution map and noted that 'the ecological requirements (for this species) are still poorly known'. Previous Irish records for this species are very sparse. Haliday (1833) included it in his list of Diptera recorded from Holywood, County Down, though there are no Irish specimens in Haliday's collection in the Dublin Museum (P. Chandler *pers. comm.*). Walker (1856) noted the species as being recorded from 'Ireland', but this may just be a restatement of Haliday's earlier record. Consequently, the species was listed as a questionably Irish species (+?) in the recent British checklist (Chandler 1998). This capture confirms the presence *N. crocata* as an Irish species.

Acknowledgements
I am grateful for the efforts of all the organisers of the Irish Beetle meeting, in particular Áine O Connor for her driving. I would also like to thank Peter Chandler for his information regarding *Nephrotoma*.

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Hilara pseudochorica Strobl, 1892 (Diptera, Empididae) associated with riverine shingles

– *Hilara pseudochorica* occurs widely but locally in Britain and throughout much of Europe in association with large streams and rivers. F. van der Goot, B. van Aartsen and M. Chvála (2000. *Nederlandse faunistiche Mededelingen* **12**, 121-149) stated that in Holland it is found about the banks of larger rivers but is rather rare over brooks while Andrew Godfrey (1999. *Dipterists Digest (Second Series)* **6**, 63-82) noted it amongst other *Hilara* species recorded from exposed riverine sediments. The species is abundant in some parts of the River Tone and the Doniford Stream in Somerset. During 2003 I made careful observations of its distribution in these two catchments and concluded that it is strictly associated with the presence of partially vegetated marginal shingle and gravel beds of large streams and rivers. Fine gravels and coarse sands seemed to be preferred and it was readily taken in pitfall traps placed flush with the surface. I also employed funnel traps placed half buried in the gravels such that the aperture of the funnel was flush with the surface and found that *H. pseudochorica* (mostly males) was easily caught, suggesting that they run *on* as well as flying above the surface of the gravels. Gravel bars, partially shaded by trees and shrubs seemed to be preferred over more exposed sites. The species was also readily taken by sweeping bank side vegetation or when flying low over the surface of the water nearby.

Although many species of *Hilara* are most readily found around streams and rivers, they usually assemble in such places to scavenge from the water surface or engage in epigamic activities. While a few species of *Hilara* including *H. apta* Collin, 1927 and *H. albiventris* von Roser, 1840 seem to favour exposed river or lakeside sediments, an apparently obligate association is probable only for *H. setosa* Collin, 1927, *H. biseta* Collin, 1927 and for *H. pseudochorica* – **ADRIAN R. PLANT,** 9 High Street, Bishops Lydeard, Taunton, Somerset, TA4 3AX

Dipterists Digest 2004 **10**, 117-118

Sapromyza albiceps (Fallén, 1820) (Diptera, Lauxaniidae), new to Norway

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Summary
Sapromyza albiceps (Fallén, 1820) (Lauxaniidae) is added to the Norwegian Diptera list.

The lauxaniid fly *Sapromyza albiceps* (Fallén, 1820) is here recorded as new to Norway. Six females were collected in a Malaise trap between 3 and 28. July 1986 at Naustdal in Naustdal community, Sogn and Fjordane province by Fred Midtgaard. Naustdal is situated on the north shore of the Førdefjord in southern Norway at nearly 6 E and somewhat north of 61 N, close to the town Førde.

S. albiceps was described from Esperöd in Sweden. Today only one male named *S. albiceps* exists in Fallén's collection according to Merz (2003a). Merz remarked on the strong sexual dimorphism of this species. The male has an ivory-yellow/ whitish frons with a contrasting black ocellar triangle and only one fronto-orbital seta. The female has the ordinary yellow frons of many other species of the genus *Sapromyza,* and two fronto-orbital setae. Both sexes have 0 + 3 dorsocentral setae, and the first of the three inserted nearly on the line of the suture. The fifth abdominal tergite has brownish patches, and there are smaller patches on the sixth tergite. Collin (1948) gave a description and key; Remm and Elberg (1979) provided illustrations of the male terminalia.

S. albiceps is recorded from Denmark (Merz *et al.* 2001), but not from Finland. Merz (2003b) gave the distribution as all Europe. In Switzerland it is local, but often several specimens had been found at the localities.

S. albiceps is probably rare in Norway since the females from Naustdal are the only ones discovered in a large material (several thousand specimens) of Lauxaniidae from many areas in Norway. The genus *Sapromyza* is otherwise well represented in Norway, and including *S. albiceps* eleven species of the genus *Sapromyza* sensu lato have hitherto been recorded from Norway compared to eleven species in a recent checklist from Denmark (Merz *et al.* 2000).

Acknowledgements
Dr. Bernhard Merz, Muséum d'histoire naturelle, C.P. 6434, CH - 1211 Genève, Switzerland, has verified the determination of the material. I also thank Dr. Fred Midtgaard, Norsk Institutt for Skogforskning (The Norwegian Institute of Forest Research), Høgskoleveien 12, N -1432 NLH-Ås, Norway who gave me access to the material.

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Inland records for *Melanochaeta pubescens* (Thalhammer) (Diptera, Chloropidae) – On 10 August 2003 I caught one male of *Melanochaeta pubescens* (Thalhammer) in Hertfordshire, near Tewin on a wet meadow beside the River Mimram (TL278135), while sweeping over *Juncus, Carex* and various grasses. According to John Ismay (*pers. comm.*) this is the northernmost British record of this fly, which is known mainly from coastal sites. It has also recently been found inland by Peter Chandler near Reading, Berkshire on 5 September 2003. A male was found at Heron's Nest (SU6670), an area of grassland and marsh vegetation adjoining gravel pits, just south of the M4 motorway adjacent to Theale Lake. A female was caught at Searles Farm East (S6870-6970), a varied area of grassland and carr between the River Kennet and gravel pits north of the motorway.

In Britain *M. pubescens* is known from coastal sites in Essex, Kent and along the south coast of England into Wales (Ismay, J.W. 1981. Records of *Elachiptera pubescens* Thalhammer (Dipt., Chloropidae). *Entomologist's monthly Magazine* 117, 58; Howe, M.A. and Howe, E.A. 2000. A review of the Dipterists Forum summer field meeting of Abergavenny, 1997. *Dipterists Digest* (*Second Series*) 8, 31-48). This species, which is Notable (Falk, S. and Ismay, J.W. in preparation. *A review of the scarce and threatened flies of Great Britain: Acalyptratae*. JNCC, Peterborough), lives in a variety of habitats including heath and saltmarsh (Ismay, J.W. in preparation. Chloropid flies. Diptera: Chloropidae. *Handbooks for the Identification of British Insects*).

This chloropid fly (subfamily Oscinellinae) can be recognised by having two longer orbital setae beside several shorter ones, the dark ocellar triangle has a shining area anterior to the anterior ocellus and is dusted posteriorly and laterally, the rest of the head except the occiput is yellow and the proepisternum and postpronotal lobe vary from dark brown to yellowish, the arista is thickened and the legs yellow with some darkening, sometimes only on the posterior tibia but often on the middle part of all femora and tibiae (modified from Ismay, *op.cit.*).

I would like to thank Dr Ismay for making the draft version of his handbook available to me, and Peter Chandler for enabling me to include his records in this note – **BARBARA SCHULTEN,** c/o Hope Entomological Collections, University of Oxford Museum of Natural History, Parks Road, Oxford, OX1 6PW

Dipterists Digest 2004 **10**, 119-124

Abundance of phototactic Lauxaniidae (Diptera) in SE Norway as indicated by light trap catches

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Summary
A total of 912 specimens belonging to 15 species of Lauxaniidae (Diptera) were identified from light trap catches during the years 1994 to 2002. Three species, *Meiosimyza decempunctata* (Fallén, 1820), *M. rorida* (Fallén, 1820) and *Tricholauxania praeusta* (Fallén, 1820) were present in large numbers, with varying abundance between and within years. More than one third of the species known for Norway were recorded from one locality.

Introduction

In 1984 a study was initiated to describe variations in abundance over a long period of time for common, phototactic Lepidoptera at a single locality (Kobro 1991). Several other insect groups were also recorded (Andersen *et al.*1993, Greve and Kobro 1998). Specimens of the family Lauxaniidae (Diptera) collected during the years 1994-2002 were identified, and the results are presented and discussed here.

Table 1. Lauxaniidae collected at Fagerstrand, Nesodden

Aulogastromyia anisodactyla (Loew, 1845)	16	
Meiosimyza affinis (Zetterstedt, 1847)	5	
M. decempunctata (Fallén, 1820)	120	
M. decipiens (Loew, 1847)	2	
M. platycephala (Loew, 1847)	31	
M. rorida (Fallén, 1820)	442	
M. subfasciata (Zetterstedt, 1838)	57	
Pseudolyciella pallidiventris (Fallén, 1820)	16	*
P. stylata Papp, 1978	45	*
P. subpallidiventris Papp, 1978	1	*
Minettia lupulina (Fabricius, 1787)	1	
Pachycerina seticornis (Fallén, 1820)	35	
Peplomyza litura (Meigen, 1826)	50	
Sapromyza zetterstedti Hendel, 1908	1	
Tricholauxania praeusta (Fallén, 1820)	90	

* Male(s) only

Material and methods

The light trap used was a simple funnel type (Jalas-model) with a 160 W mixed spectrum light bulb (Osram HWL 160W/235v) one metre above the ground at precisely the same locality each year

from 1984. A new bulb was installed at the start of each season. The trap was situated in an edge habitat between mature coniferous forest, temperate deciduous forest, open grassland and a garden at Fagerstrand, Nesodden, Akershus county. The site is a shaded area, only to a small extent exposed to direct moonlight. The trap was usually operated the first three nights of every week from late June to late October (Kobro 1991), and the total catch for each species and year is given. We identified nearly all specimens. The nomenclature follows Chandler (1998, 2000).

Remarks on the different species and their distribution are based on material identified by us, and kept in the collection of the Zoological Museum, University of Bergen, unless otherwise stated. It is an assumption in this work that phototactism and activity responses for each species are constant from year to year, and that activity can be correlated to abundance.

Results

For the years 1998 to 2002 all specimens, a total of 698 from 14 species, were identified. In addition 214 selected specimens were identified previously (from 1994 to 1997) which included one additional species. Hence a total of 912 specimens from 15 species were identified (Table 1). Females belonging to the three species *Pseudolyciella pallidiventris* (Fallén, 1820), *P. stylata* Papp, 1978 and *P. subpallidiventris* Papp, 1978 cannot be separated, and they are not listed. Hence the true number of specimens collected during 1994 to 2002 was somewhat higher.

Discussion

The total number of species of Lauxaniidae recorded from Norway is now 40 (Greve 2002a, 2002b, Greve and Merz 2003), and thus more than one third of the Lauxaniidae species known from Norway were recorded in our study from one locality (Table 1). There were commonly more than one species in one night's catch, and some nights up to nearly ten species. The highest number of species in one year was twelve, the lowest ten. Hence, Lauxaniidae were frequently collected in our light trap, even though in Central Europe Merz (2002) considered the method unsuitable for collecting Lauxaniidae. He also considered the Lauxaniidae at that latitude as day active. One explanation to our contradictory results could be that the flies are more night active at northern latitudes.

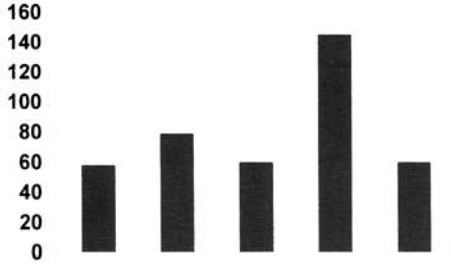
Three species were dominant: *M. decempunctata*, *M. rorida* and *T. praeusta*. *M. rorida* was particularly abundant, constituting 48.5% of the material collected between 1998 and 2002. *M. decempunctata* constituted 13.2 % and *T. praeusta* 9.9% of the material collected in this period. The abundance of these species varied from year to year, as they peaked in different years (Fig. 1). Their abundance also varied within the year, apparently having two periods (Fig. 2).

M. rorida is very common in lowlands in South and Central Norway, and it often occurs in high numbers when netted or caught in Malaise traps. *M. rorida* is widespread in most parts of Europe. The larvae feed on fungus mycelia or microorganisms on dead leaves and decaying twigs (Papp 1978). *M. rorida* is also eurytopic, thus it is the only lauxaniid hitherto recorded from the Orkney islands (Laurence 1997). The highest number of specimens of *M. rorida* collected by us in one night is 32.

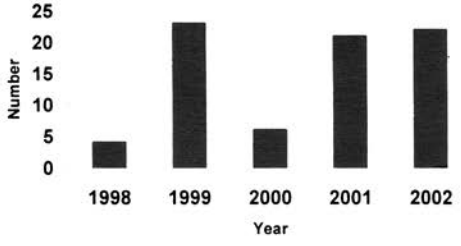
Fig. 1. Abundance of the most common species of Lauxaniidae at Fagerstrand, Nesodden.

Meiosimyza decempunctata

Meiosimyza rorida



Tricholauxania praeusta



M. decempunctata has a distribution similar to *M. rorida* in Norway. It is a widespread European species characteristic of wet forests in hills and mountains of Hungary (Papp 1978).

The distribution of *T. praeusta* is more restricted to Southern Norway. It is also widely distributed in Europe (Papp 1984).

Some of the listed records of *Aulogastromyia anisodactyla, Meiosimyza decipiens, M. platycephala* and *Pseudolyciella subpallidiventris* discussed here were previously published when these species were recorded as new to Norway (Greve 2000). *A. anisodactyla* and *M. subpallidiventris* have only been recorded from the Fagerstrand locality in Norway, while *M. decipiens* and *M. platycephala* are later known from several other localities in South-East Norway, and they are not rare.

A. anisodactyla is probably more common in central parts of Europe (Papp 1978). *P. subpallidiventris* has only been recorded from scattered localities in Europe.

P. pallidiventris, P. stylata and *P. subpallidiventris* constitute a group where females cannot be distinguished.

M. affinis is known from South and Central Norway, while *M. subfasciata* is only known from scattered records in South Norway.

Pachycerina seticornis was recorded at Fagerstrand in intermediate numbers and has previously been recorded from other localities in South and Central Norway. Many specimens were collected by window traps in a forest ecology programme in Akershus (Greve and Skartveit 1998), and this species is probably more typical in a true forest locality.

Peplomyza litura was recorded as new to Norway by Rognes (1995), and was recorded by us in intermediate numbers. Rotheray (1998) described the larvae of *P. litura* found under bark of *Fagus, Fraxinus* and *Populus tremula* from investigations of saproxylic Diptera in Scotland. Hence the larvae of *P. litura* live differently from other lauxaniid larvae. Both *P. litura* and *Minettia lupulina* are hitherto only recorded from South-East Norway and both species are not rare in the Oslofjord area.

Meiosimyza and *Pseudolyciella* are well represented in the Norwegian Lauxaniidae fauna, with eleven species. These genera are very well represented in our light-trapped material in contrast to the genus *Sapromyza*, of which a single specimen of *Sapromyza zetterstedti* is the only representative in our material. The genus *Sapromyza* is well represented in South-East Norway, as there are at least seven species in the Oslofjord area. *S. zetterstedti* is not common, but it is widely distributed in southern Norway.

Two other genera, *Calliopum* and *Lauxania*, are also not rare in the Oslofjord area, but not collected by us.

According to Papp (1978) and Papp and Shatalkin (1998) Lauxaniidae has been one of the least studied families of flies during the last decades, probably because Lauxaniidae contains no species that are either pests or for other reasons have been collectors' items. The number of species of Lauxaniidae light-trapped at Fagerstrand is high compared to the number recorded from Norway totally; however, the Lauxaniidae have still not been sufficiently surveyed in Norway and a total of 40 species is too low compared to the number known from elsewhere in Fennoscandia and Denmark (Hackman 1980, Merz *et al.* 2001).

Acknowledgements
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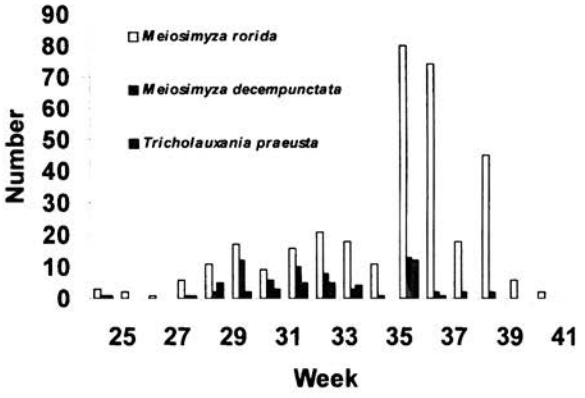

Fig. 2. Abundance pattern within the year for the most common species of Lauxaniidae at Fagerstrand, Nesodden, during the years 1998-2002.

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Nephrotoma dorsalis (Fabricius) (Diptera, Tipulidae) in East Sussex -

On 10 July 2003 I found one male *Nephrotoma dorsalis* in a Malaise-type trap I had rigged up in an area of dry, shady woodland in my garden in Sedlescombe, East Sussex (TQ783188).

N. dorsalis is a very distinctively marked Notable cranefly and, according to A. Stubbs (1992. *Provisional atlas of the long-palped craneflies (Diptera: Tipulinae) of Britain and Ireland.* Biological Records Centre, Cambridgeshire), has been recorded mainly from central Scotland and the eastern Highlands, parts of Wales, south-western Ireland and the New Forest area of Hampshire. Most of these records have been from shaded, sandy river banks. Stubbs goes on to say that a record from Kent (TQ6014, somewhere between Ashford and the Romney Marsh) is doubtful "because it was from dry woodland." In mainland Europe the species is said to be common in wet woodland (C. Pierre. 1924, Diptères: Tipulidae. *Faune de France 8*. Lechevalier, Paris).

The Sedlescombe record which is, as far as I know, the first for East or West Sussex was, like the Kent record, from dry woodland. Apart from some small garden ponds the nearest permanently flowing stream is 0.75km away and the nearest part of the rivers Brede and Rother 1.25km and 6.5km respectively. The extensive broad-leaved woodlands contiguous with the garden are all dry and the nearest substantial area of wet woodland some 1.5km away.

In the light of this it would seem that the Kent record is not so doubtful. In many years of studying Diptera in the Sedlescombe area I have not encountered this species before and this one example could have flown some distance. It may be, however, that there are some permanent populations in suitable parts of the Weald as there are of many invertebrates and plants with a generally more northerly and westerly distribution in the British Isles - **PATRICK ROPER,** South View, Churchland Lane, Sedlescombe, East Sussex TN33 0PF

Dipterists Digest 2004 **10**, 125-127

Delayed wing expansion in Tachinidae (Diptera)

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Summary
Several reared specimens of the tachinid fly *Gonia picea* (Robineau-Desvoidy) failed to expand their wings on the day of eclosion, but were able to do so at higher temperatures a few days later. The phenomenon was also observed in *Drino vicina* (Zetterstedt). Possible explanations are suggested.

Observations

On 31.v.2002 I collected a quantity of caterpillars including well-grown larvae of the noctuid moth *Mythimna impura* (Hübner) by sweeping an area of unimproved grassland at Bradwell Grove, near Burford, Oxfordshire, after dark. These were treated under my standard rearing conditions (cf. Shaw 1997) and either produced ichneumonid parasitoids or pupated over the next few weeks. Soon after the moth pupae had formed it became clear that many of them harboured a solitary tachinid, later identified as *Gonia picea* (Robineau-Desvoidy), which had perforated the host's pupal cuticle towards its posterior end before pupariating in a head-to-head orientation inside the host pupa. A few pupae of the noctuid *Xestia xanthographa* (Denis & Schiffermüller), from larvae collected at the same place, were also affected. The tachinids were overwintered in this condition in a fully shaded and well ventilated detached wooden shed (cf. Shaw 1997) in Edinburgh, and started to emerge from 24.ii.2003, the last one emerging on 24.iii.2003. Many of them, however, despite being fully mobile and quite active, did not expand their wings immediately, only doing so when the temperature in the shed rose to at least 12°C or, more reliably, 14-15°C. Some of the individuals that did not expand their wings on the day of emergence were brought indoors (ca 19°C) after a few days, and many then fully expanded their wings within 2-3 hours. During this process the ptilinum was greatly extended. Under the prevailing conditions successful wing expansion appeared to be possible following about a week of insufficient temperature after eclosion; any longer than that and the flies (which were not given food or water) appeared to be too dehydrated to be able to do it. The results for the 12 individuals that were meaningfully observed are given in Table 1.

Despite rearing a great many, the only other tachinid I have noticed to expand its wings on a day subsequent to that on which it eclosed was the single *Drino vicina* (Zetterstedt) mentioned by Ford *et al.* (2000). This was reared from a sphingid host collected in Ardèche, France, and eclosed the following year, on 24.vi, in the much cooler climate of Edinburgh, expanding its wings two days later. Unfortunately temperatures were not noted, but it seems possible that a day-length (post-maximum?) trigger might have caused emergence into an abnormally cool environment that was on the day insufficient for wing expansion.

Discussion

Gonia picea is a species that needs to be active as an adult early in the year in order to exploit its hosts, which are principally overwintered grass-feeding noctuids (Belshaw 1993). It is said to overwinter as a pharate adult (Belshaw 1993), which is a fairly common mechanism underlying early spring adult appearance in a wide range of holometabolous insects. Because its pupation site

is effectively chosen for it by the host, *G. picea* will have little control over the spring temperature it experiences pre-eclosion. It appears to be able to emerge from a cold site (perhaps triggered more by day-length than temperature) under conditions insufficient for wing expansion but, as it is evidently capable of walking at fairly low temperatures, in the wild it is presumably easily able to find a basking area in which insolation (or some other source of energy) would raise its temperature above the threshold needed for wing expansion. From my observations it would appear to have at least a week to experience the necessary conditions, though I suspect that by taking in moisture to avoid desiccation this period might be prolonged considerably.

The failure of the *D. vicina* to expand its wings on the day of eclosion seems likely also to have been temperature-related. If this was so, it may be that the ability of Tachinidae to expand their wings some time after eclosion, if conditions are not immediately sufficient, may be widespread (*Drino* and *Gonia* are not particularly closely related, belonging respectively to the tribes Eryciini and Goniini of the subfamily Exoristinae), at least among species that pass some time as pharate adults in their puparia (whether this occurs in *D. vicina* is not known to me). Such an ability might be an adaptation either to deal with their low control over pupation sites or to day-length rather than temperature triggers governing eclosion, or, perhaps most probably, to a combination of the two.

Table 1. Eclosion and wing expansion data for 12 specimens of *Gonia picea* under differing temperatures. All eclosions were in an unheated outdoor shed. In the final column "expanded" refers to wing expansion within 2-3 hours.

Date of eclosion	Shed temperature until either wing expansion or transfer to 19°C	Date of wing expansion in shed (max. temperature)	Date of transfer to 19°C (indoors)	Outcome of transfer to 19°C
24.ii.03	<12°C	-	1.iii.03	Expanded
1.iii.03	<12°C	-	2.iii.03	Expanded
5/6.iii.03	≤12°C	-	14.iii.03	Expanded
5/6.iii.03	≤12°C	-	14.iii.03	Expanded (only one wing)
5/6.iii.03	<12°C	9.iii.03 (12°C)		
9.iii.03		9.iii.03 (12°C)		
9.iii.03	≤14°C	-	21.iii.03	Died quickly, unexpanded
11.iii.03	≤14°C		22.iii.03	Died quickly, unexpanded
16.iii.03	<14°C	21.iii.03 (14°C)		
16.iii.03	≤14°C	-	22.iii.03	Expanded
20.iii.03	≤14°C	-	22.iii.03	Expanded
24.iii.03		24..iii.03 (15°C)		

Acknowledgements
I am grateful to my sister, Nanina Shaw-Reade, for helping me to collect caterpillars at Bradwell Grove.

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***Cerodontha spinata* (Groschke, 1954) (Diptera, Agromyzidae) in Somerset and Gloucestershire** – In 2002 I reported the discovery of this species at a single wood in north Somerset (Gibbs, D.J. 2002. *Melanagromyza eriolepidis* Spencer, 1961 and *Cerodontha spinata* (Groschke, 1954) (Diptera; Agromyzidae) new to Britain. *Dipterists Digest (Second Series)* **9,** 153-158). In 2003 mines of this species were found in the leaves of *Carex sylvatica* at three other localities and adults were reared.
Lancaut Nature Reserve, ST5496, V.C. 34, 1 female, collected 28 May, emerged 22 July.
Nightingale Valley, Avon Gorge, ST5673, V.C. 6, 1 female, collected 6 May.
Midger Nature Reserve, ST7989, V.C. 34, 1 male, collected 15 April, emerged in July.

It seems probable that the species is not infrequent in the region – **DAVID GIBBS,** 6 Stephen Street, Redfield Bristol BS5 9DY

***Lophosia fasciata* Meigen (Diptera, Tachinidae) in Shropshire** – On 5 August 2003, whilst moth-trapping with Ian Cheeseborough, at Earl's Hill Shropshire Wildlife Trust Nature Reserve, Shropshire (SJ409048) I encountered an unusual-looking fly that came to the mercury vapour trap at approximately 23.20 pm. The fly was later identified as the Nationally Scarce tachinid fly *Lophosia fasciata* Meigen, using the handbook by R. Belshaw (1993. Tachinid Flies, Diptera: Tachinidae. *Handbooks for the Identification of British Insects* **10**(4a, i), 1-169. Royal Entomological Society, London.). However, this was only after an initial amount of confusion as the fly, at first glance, looks little like any other member of the family Tachinidae, possessing a curved, rounded abdomen, reminiscent of a conopid, and has brown wing markings. A photograph of a Norfolk specimen has recently appeared in the BENHS 2002 Annual Exhibition Report. (2003. *British Journal of Entomology and Natural History* **16,** 181).

The Earl's Hill reserve comprises deciduous and coniferous woodland and wet meadow habitat. The moth trap was situated beneath open deciduous woodland and was being run as part of a contract for the Shropshire Wildlife Trust – **PETER BOARDMAN,** 7 High Street, Weston Rhyn, Shropshire, SY10 7RP

Dipterists Digest 2004 **10**, 128-130

REVIEW

Checklist of the Diptera of the Netherlands. 2002. Paul L. Th. Beuk (Ed.). Published by KNNV Uitgeverij, Utrecht, ISBN 90 5011 163 7. Price 11.35 Euros (orders by Fax +00 302368907 or Email: info@knnvuitgeverij.nl) (in English)

This well-produced hardback checklist is unique among the several recent national catalogues of European Diptera in being supplied with a CD-ROM bearing the entire list in a "browsable (HTML) format" and it is anticipated that internet updates will subsequently be available.

The checklist is dedicated to the memory of Volkert van der Goot (1929-2002), described as "an inspiration for Dutch dipterology" and begins with an interesting account of the history of the study of Diptera in the Netherlands. The previous attempts at compiling national lists are described, the most recent being in 1939 by De Meijere. The latter work is of necessity used as the starting point for compiling the present checklist and later nomenclatural changes are related back to that list. As with the British checklist a reference is given for each species added to the Dutch list since this previous list and to those species recorded earlier but overlooked by De Meijere.

Like other European checklists the idea of producing this list stemmed from the Catalogue of Palaearctic Diptera and work on it began in 1991, although most was done within the final two years before publication. Much of the compilation was done by the editor with the assistance of Volkert van der Goot, but 27 other authors were involved in particular families, 20 of them Dutch and seven from four other countries. The checklist aims to include all species of Diptera recorded from the Netherlands up to the first half of 2002, a total of 4967 species. This figure clearly demonstrates that there are significant gaps in knowledge in some families, a substantially greater total being expected when coverage has been more uniform.

The classification used mainly agrees with that in the British checklist although in the text families are arranged alphabetically under superfamilies. The 105 families recognised include two not known from the British Isles, i.e. Pleciidae and Coenomyiidae, each with a single species and there are two families found in the British Isles that are as yet unrecorded in the Netherlands, i.e. Pseudopomyzidae and Stenomicridae, with 1 and 2 British species respectively. There are also small differences in family composition, Helcomyzidae and Heterocheilidae being recognised as distinct from Dryomyzidae, Gasterophilidae and Hypodermatidae from Oestridae.

Each family account begins with a diagnosis, comments on biology and lists of significant references to the family in general and to the Dutch fauna, providing a useful introduction to study of the group. For about a third of the families a colour illustration is provided, sometimes a drawing but often a photograph illustrating the habitus. Total figures are given for the Dutch species, with numbers of introduced and doubtful species listed after the confirmed total. For comparison the totals for Belgium, Germany, British Isles (given as UK but the figures are the overall totals from the 1998 checklist, so Ireland is included contrary to the statement on page 20) and the world are also given.

A useful annotation in the species lists is the letter N indicating that Dutch material has recently been examined by a specialist. An indication is also given where a species was described from Dutch types. There are also explanatory notes in similar format to the British checklist, e.g. in relation to the doubtful species explaining why they have not been accepted as correctly recorded. In some cases these notes also include data for species newly recorded from the Netherlands,

notably under Lauxaniidae where 12 species are added in this way, but it is more common to state that newly added species will be "formally added" in another work under preparation and the data consequently omitted.

The checklist is concluded with an extensive bibliography and an index to all generic and specific names.

The fauna of the Netherlands is of particular interest for comparison with the British fauna, in view of geographical proximity. Much of the fauna is of course in common but many species occur which have not reached the British Isles. On the other hand the boreal and montane elements in the British fauna are absent due to lack of suitable habitat or climatic conditions. A full comparison would not be possible until the Dutch fauna of all groups is well known but a perusal of the list has shown that 719 species, about a seventh of the total species included, are not recorded from the British Isles. However, the proportion varies greatly and in some well-worked families a significantly greater number of the species are in this category. Of the larger families the greatest difference is in the Syrphidae where 81 of the 327 species recognised are not British and in the Tachinidae where there are 101 non-British species among the 325 listed. In the Empididae the overall proportion is similar to the Syrphidae with 40 out of 175 not British, but these include 20 of the 47 species in *Empis* sensu lato and as many as 11 of the 24 species listed in subgenus *Empis* sensu stricto. A wide disparity is notable between for example Rhagionidae with 8 of 19 species listed not found in Britain but in Stratiomyidae only 2 of 44 Dutch species.

As this is the most recent European checklist with a significant proportion of species in common with the British fauna a detailed comparison has been made. For the most part the Dutch list uses the same nomenclature for species in common with the British fauna. Differences in generic or subgeneric assignments do of course appear, often due to lack of agreement between workers on a particular family and such cases are found in all checklists. Excluding spelling differences, thirty-three cases were noted where a different specific name is used and the reasons for this were assessed. Details of all points noted have been forwarded to the editor and only some considered of significance to the British list are discussed here. Comments are arranged under families in the order of the Dutch checklist. Authors' names are omitted unless relevant to the comment. References cited are to be found either in the Dutch or British checklists or in the supplements to the latter that have appeared in the *Digest* so they are not given fully here.

Bibionidae. *Bibio lepidus* is listed as a questionable synonym of *B. clavipes*, as intermediates are said to exist. *B. hybridus* is similarly given as a synonym of *B. lanigerus*, said to differ only on the colour of body hair. These conclusions may well be correct but require further work and it is not indicated that these are new synonymies.

Rhagonidae. *Chrysopilus cristatus* is accepted as the valid name following British usage, contrary to other European lists that use *auratus*.

Asilidae. *Dioctria baumhaueri* is listed as a synonym of *hyalipennis* (see comments in checklist supplement (9) in the previous *Digest* **10,** 59).

Empididae. *Rhamphomyia hirsutipes* is given as a provisional synonym of *R. erythrophthalma*, following previous suggestions by many authors.

R. subcinerascens is placed as a synonym of *cinerascens*, on the grounds of lack of constant distinguishing characters.

Phoridae. *Megaselia rata* is used for *giraudii*, because of the type designation in Sciaridae by Menzel and Mohrig 2000; however, this overlooked an earlier type designation in Phoridae by Henry Disney. An application to ICZN to retain the usage of *giraudii* in both families is under consideration.

Syrphidae. The names *horticola* and *nemorum* (rather than *lineata* and *interrupta* respectively) are used in *Eristalis*; this accords with most recent usage in the first case but not the second. In Note 1 it is stated that *lineata* has not been used but it has now been used by Hippa *et al.* 2001 (see *Digest* supplement (7) **9,** 85) and an application to ICZN is to be made to seek suppression of this in favour of *horticola*, at the same time recognising feminine gender for *Eristalis*.

The ICZN ruling on *Chrysotoxum* and *Xanthogramma* names is accepted but perhaps as a consequence some other name changes resulting from Thompson *et al.* (1982) are not recognised, i.e. *Chrysogaster chalybeata* and *Pipizella varipes* are used for *cemiteriorum* and *viduata* respectively, while the name *viduata* is used for a non-British species of *Melanogaster*.

Ulidiidae. *Herina nigrina* is used for *germinationis*, preoccupied in *Musca* by Linnaeus, 1758 (*Opomyza germinationis*). This has been overlooked possibly because Thompson and Pont (1992) indicated *germinationis* Rossi to be a subsequent use of the Linnaean name and did not mention *Herina*; recent works on the genus (e.g. Merz 1996) have used *germinationis* but *nigrina* is evidently the valid name (see *Corrections and changes to the Diptera Checklist (10)* below).

Lauxaniidae. *Meiosimyza obtusa* (Collin), of which the author's name should have parentheses, is listed as of specific rank and newly recorded from the Netherlands. In the British checklist it was decided that the name was available but its identity remains uncertain and it was queried as a synonym of *M.* (as *Lyciella*) *mihalyii*. It is still unclear whether these names are synonymous.

Drosophilidae. Generic rank is accepted for the subgenera *Hirtodrosophila*, *Lordiphosa* and *Scaptodrosophila* of *Drosophila* following Grimaldi 1990. This was not followed in the British checklist but is to be adopted in the forthcoming RES Handbook to the British Drosophilidae and will probably become more generally recognised (see *Corrections and changes to the Diptera Checklist (10)* below).

Scathophagidae. *Cordilura umbrosa* is used for *C. impudica*, following Gorodkov 1986, presumably for the reason stated in Note 3 of the British checklist.

EDITOR

Dipterists Digest 2004 **10**, 131-134

Additions to the Irish List of Chironomidae (Diptera), including the first species of the millennium new to the British Isles

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Summary
Twenty species of Chironomidae are added to the list of Irish Diptera; one of them, *Chaetocladius insolitus* Caspers, 1987 is new to the British Isles and was collected on the morning of 1 January 2000. The number of Irish chironomid species now stands at 458.

Introduction

The Checklist of British Diptera (Chandler 1998) recorded 588 species of Chironomidae for the British Isles but only 393 with 4 requiring confirmation from Ireland, including ten known for Ireland but not Britain. In the simultaneously published checklist of Irish aquatic insects (Ashe *et al.* 1998) 396 species of Chironomidae were recorded, since two species queried as Irish in the British checklist, *Chironomus aprilinus* Meigen and *Rheotanytarsus photophilus* (Goetghebuer), were confirmed and *Tanytarsus lestagei* (aggregate) was also listed; a record of *T. lestagei* Goetghebuer itself is given in the present paper. Murray (2000) added *Telmatogeton japonicus* Tokunaga as new to the British Isles from Ireland. Langton (2002) added 39 species to the Irish list, three of them new to the British Isles, raising the Irish total to 436. Murray and Murray (2003) added two further species, including *Limnophyes angelicae* Saether for which another Irish record is reported here. Ashe *et al.* (*op. cit.*) excluded *Harnischia curtilamellata* (Malloch) as the original record of it had been based on a questionable synonymy of *Chironomus lacustris* Haliday, but it is widespread in Ireland and was reinstated by Langton (*op. cit.*). In this paper a further 20 species are recorded for Ireland for the first time.

Systematic account

Subfamily Orthocladiinae

Chaetocladius insolitus Caspers, 1987
New to the British Isles. The occurrence of this species only at the turn of the year is unexpected: the Austrian material on which Caspers (1987) based his description was collected from August to October.
DERRY: River Bann at Coleraine, C855304, 1.i.2000, 17.i.2000, 18.i.2000, 6.ii.2000, pupal exuviae, pharate adult male and female.

Limnophyes angelicae Sæther, 1990
DERRY: River Bann, Coleraine, C855304, 7.iv.2002, pharate adult male.

Limnophyes difficilis Brundin, 1947
DERRY: Agivey River, Garvagh, C838154, 21.vii2002, adult male (Sue McBean).

Limnophyes ninae Sæther, 1975
DERRY: River Bann, Coleraine, C855304, 10.vi.1999, 30.vi.2001, pupal exuviae.

Metriocnemus tristellus Edwards, 1929
ANTRIM: Three Mile Water, Mossley, J380892, 4.v.1999, adult male (Sue McBean). DERRY: River Bann, Coleraine, C855304, 1.i.2000, 6.i.2000, 17.i.2000, 18.i.2000, 11.xii.2000, 22.ix.2002, pupal exuviae, pharate adult male, adult male.

Metriocnemus ursinus (Holmgren, 1869)
ANTRIM: Three Mile Water, Mossley, J380892, 4.v.1999, adult male (Sue McBean).
DERRY: Downhill Forest, C760353, 24.iii.2002, adult male (Sue McBean).

Orthocladius (sensu stricto) *glabripennis* (Goetghebuer, 1921)
CLARE: Lough Graney, R568907, 24.v.2003, pupal exuviae. GALWAY: Lough Derg, M794964, 24.v.2003, pupal exuviae.

Paratrichocladius nigritus (Goetghebuer, 1938)
DERRY: River Bann, Coleraine, C855304, 20.i.2002, pupal exuviae.

Rheocricotopus (Psilocricotopus) atripes (Kieffer, 1913)
DERRY: inlet stream of Upper Creggan Reservoir, Londonderry, C413171, 26.iv.2001, 10.v.2001, pupal exuviae.

Smittia superata Goetghebuer, 1939
DERRY: Amyan McFadyen's garden, Coleraine, C848316, 13.iv.2003, adult male (Sue McBean).

Thienemanniella obscura Brundin, 1947
DERRY: inlet stream of Upper Creggan Reservoir, Londonderry, C413171, 23.iii.2001, pupal exuviae.

Subfamily Chironominae
Tribe Chironomini

Chironomus (Camptochironomus) pallidivittatus (Malloch, 1915)
ANTRIM: Lough Neagh, Antrim, J135866, 22.viii.2001, pupal exuviae. DERRY: Top pool Creggan reservoirs, Londonderry, C412171, 17.v.2002, pupal exuviae; "Howell's tarn", near Articlave, C766325, 7.vii.2002, pupal exuviae. GALWAY: Lough Rea, M624153, 25.v.03, pupal exuviae.

Glyptotendipes (Caulochironomus) scirpi (Kieffer, 1915)
DONEGAL: Lough Shivnagh, H005675, 27.iv.2002, pupal exuviae.

Microtendipes diffinis (Edwards, 1921)
DERRY: River Bann, Coleraine, C855304, 25.v.2000, pupal exuviae, 5, Kylebeg Ave., Coleraine, C856304, 6.viii.2000, adult male on window.

Parachironomus digitalis (Edwards, 1929)
DERRY: 5, Kylebeg Ave., Coleraine, C856304, 20.viii.2002, adult male on window.

Subfamily Chironominae
Tribe Tanytarsini

Rheotanytarsus muscicola Thienemann, 1929
DERRY: River Bann, Coleraine, C855304, 17.v.2000, 25.v.2000, pupal exuviae; inlet stream of Upper Creggan Reservoir, Londonderry, C413171, 18.v.2001, pupal exuviae; top pool, Creggan reservoirs, Londonderry, C412171, 18.v.2001, pupal exuviae. DOWN: Upper Bann tributary, Tullyconnaught, J166451, 27.viii.1998, pharate adult female (Lesley McLarnon).

Tanytarsus inaequalis Goetghebuer, 1921
GALWAY: Lough Rea, M624153, 25.v.2003, pupal exuviae.

Tanytarsus lestagei Goetghebuer, 1922
CLARE: Lough Graney, R568907, 24.v.2003, pupal exuviae and adult male.

Tanytarsus longitarsis Kieffer, 1911
DERRY: Upper Creggan Reservoir, Londonderry, C413172, pupal exuviae. DONEGAL: stream into Lough Shivnagh, H005673, pupal exuviae.

Tanytarsus niger Andersen, 1937
DERRY: River Bann, Coleraine, C855304, 26.iv.2001, pupal exuviae; Upper Creggan Reservoir, Londonderry, C413172, 26.iv.2001, 10.v.2001, pupal exuviae.

Tanytarsus recurvatus Brundin, 1947
GALWAY: artificial stream at picnic site by the N59, M204326, 25.v.2003, pupal exuviae.

Tanytarsus telmaticus Lindeberg, 1959
(= *simulans* Lindeberg 1967, new synonymy according to Ekrem, *pers. comm.*)
Recorded as *T. simulans* Lindeberg 1967 in Chandler (1998) and the pupal exuviae were recorded as *Tanytarsus* Pe9 in Langton 2002. Torbjørn Ekrem (*pers. comm.*) has resolved the identification and synonymy of this species.
Additional records: ANTRIM: Pool, Rathlin Island, D163520, 24.vii.2000, pupal exuviae. FERMANAGH: Belbarrinagh River, H113309, 29.vi.2000, pupal exuviae; Sruh Croppa River, H111329, 29.vi.2000, pupal exuviae; Lough Atona, Cuilcag Mountain, H110294, 29.vi.2000, pupal exuviae.

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Anatopynia plumipes (Fries, 1823) and *Chironomus nudiventris* Ryser, Scholl & Wülker, 1983 (Diptera, Chironomidae) new to Britain –

Anatopynia plumipes (Fries) develops in weedy tarns and pools (Fittkau, E.J. 1962. Die Tanypodinae (Diptera: Chironomidae). (Die tribus Anatopyniini, Macropelopiini und Pentaneurini). *Abhandlungen zur Larven Systematik der Insekten* **6,** 1-453). It is an elusive midge due to its very short emergence period in spring: on 17.iii.1999 it was abundant in Downhill Forest Lake (N. Ireland, DERRY, C757353), but revisiting the site in March in subsequent years failed to obtain a further specimen. One pupal exuviae was collected in Loch Spynie (Scotland, GRAMPIAN, NJ237665) on 23.iv.2000. The pupal exuviae of *Chironomus* (sensu stricto) *nudiventris* Ryser, Scholl & Wülker has been recognised only recently (Langton, P.H. 2003. Chironomidae exuviae. A key to pupal exuviae of the West Palaearctic Region. Biodiversity Center of ETI, University of Amsterdam. CD-ROM). It is widely distributed in pools and lakes in Britain; in Scotland it was collected from a small pool by Loch Spynie on the same date as the record of *A. plumipes* cited above and it has also occurred near the River Bure in Norfolk - **PETER H. LANGTON,** University Museum of Zoology, Downing Street, Cambridge (address for correspondence: 5, Kylebeg Ave., Coleraine, Co. Derry, BT52 1JN)

Dipterists Digest 2004 **10,** 135-146

An update of the Irish Diptera List - Editor

The 1998 checklist indicated species that had published records from Ireland by + and the 29 species then recorded from Ireland but not from Britain by ++. In the supplements provided in each subsequent issue of *Dipterists Digest* these symbols have also been used in most cases where a species newly added to the British Isles list has been recorded from Ireland. However, this has overlooked two categories of new record, i.e. those species already listed as British in the checklist that have later been recorded as new to Ireland and those species accorded the ++ mark in the checklist that have later been recorded from Britain. This deficiency was highlighted when Stuart Ball recently compiled an update of the checklist incorporating the Supplements, although indicating occurrence in Ireland was not one of the aims of this update.

Several papers adding to knowledge of the Irish fauna have appeared in the *Digest* but a number of others have been scattered across several other journals. It was therefore considered worthwhile to bring together this information to give an indication of the present situation that can also be used as a basis for subsequent updates and to assist towards the compilation of an Irish checklist. A list is also provided of species that have been deleted from the Irish list, mainly because they were based on previous misidentifications. There is consequently a net increase of 306 species, resulting in a new Irish total of 3138, plus 41 still requiring confirmation. The total of species known from Ireland but not from Britain has increased to 34.

In each of the following categories species are listed in the same order as the 1998 checklist. If the nomenclature differs this is following the *Digest* supplements.

Species marked ++ in the checklist for which there are now also British records

Anatopynia plumipes (Fries, 1823) (Chironomidae) (Langton 2004a)
Cheilosia ahenea (von Roser, 1840) (Syrphidae) (Parker 2001)
Cheilosia psilophthalma Becker, 1894 (Syrphidae) (Falk 2002)
Liriomyza trifolii (Burgess, 1880) (Agromyzidae) (Bartlett and Powell 1981; an introduced species for which a British occurrence was overlooked in the checklist)

Species added from Ireland since the checklist, but with no British records

For the species marked * the ++ was inadvertently omitted in the checklist supplement.
Sycorax feuerborni Jung, 1954 (Psychodidae) (Withers 2002a)
Cryptochironomus defectus (Kieffer, 1917) (Chironomidae) (Langton 2002)
Polypedilum aegyptium Kieffer, 1925 (Chironomidae) (Langton 2002)
Chaetocladius insolitus Caspers, 1987 (Chironomidae) (Langton 2004b)
Parakiefferiella scandica Brundin, 1956 (Chironomidae) (Langton 2002)
Telmatogeton japonicus Tokunaga, 1977* (Chironomidae) (Murray 2000)
Megaselia haraldlundi Disney, 1995 (Phoridae) (Buck and Disney 2001)
Pipiza festiva Meigen (Syrphidae) (Speight 2002)
Lasiosina chandleri Ismay, 2001* (Chloropidae) (Ismay 2001)

Species added from both Britain and Ireland since the checklist

Bradysia leptoptera Tuomikoski, 1960 (Sciaridae) (Chandler *et al.* 2002)
Bradysia nocturna Tuomikoski, 1960 (Sciaridae) (Chandler *et al.* 2002)

Leptosciarella cerifera Mohrig & Menzel, 1997 (Sciaridae) (Chandler *et al.* 2002)
Anapausis dalmatina Duda, 1928 (Scatopsidae) (Chandler 1999)
Chironomus nudiventris Ryser, Scholl & Wülker, 1983 (Chironomidae) (recorded from Ireland by Langton 2002 and from Britain by Langton 2004a)
Megaselia oviaraneae Disney, 1999 (Phoridae) (described from Britain; added from Ireland by Withers 2002a)
Microdon myrmicae Schönrogge *et al.*, 2002 (Syrphidae) (described from Britain; added from Ireland by Speight 2002 and 2003)
Notiphila graecula Becker, 1926 (Ephydridae) (added for Britain by Drake 2001b, for Ireland by Chandler *et al.* 2002)
Notiphila subnigra Krivosheina, 1998 (Ephydridae) (Drake 2001b)

As the previous category but with the British record requiring confirmation
Syrphus rectus Osten Sacken, 1875 (Syrphidae) (recorded from Ireland by Speight 1999; a possible British record was provided by Plant 2000)

Species deleted from the Irish List
Bradysia aprica (Winnertz, 1867) (Sciaridae) (Chandler *et al.* 2002; misidentification of *B. nitidicollis*)
Bradysia rufescens (Zetterstedt, 1852) (Sciaridae) (Chandler *et al.* 2002; not correctly recorded from the British Isles as records relating to several other species, yet to be clarified in Ireland)
Leptosciarella subspinulosa (Edwards, 1925) (Sciaridae) (here deleted; added for Britain and Ireland by Chandler *et al.* 2002 but since confirmed to be within the range of variation in *L. pilosa*: Frank Menzel *pers. comm.*)
Scatopsciara neglecta Menzel & Mohrig, 1998 (Sciaridae) (Withers 2002a; the record of *S. pusilla* by Blackith *et al.* 1991 had been wrongly assumed to relate to this in checklist)
Xylosciara lignicola (Winnertz, 1867) (Withers 2002a; misidentification by Blackith *et al.* 1991 of *X. heptacantha*)
Anapausis soluta (Loew, 1846) (Scatopsidae) (Chandler 1999; misidentification of *A. dalmatina*)
Cetema paramyopinum Collin, 1966 (Chloropidae) (deleted from both British and Irish lists due to synonymy with *neglectum*; Ismay *et al.* 2001)
Norellisoma lituratum (Wiedemann in Meigen, 1826) (Scathophagidae) (Chandler *et al.* 2002; record related to *N. opacum*)

Species marked ?+ in the checklist because there was doubt about the Irish records, but since confirmed as Irish
Nephrotoma crocata (Linnaeus) (Tipulidae) (Smith 2004)
Leia bimaculata (Meigen) (Mycetophilidae) (Chandler *et al.* 2000)
Chironomus aprilinus Meigen (Chironomidae) (Ashe *et al.* 1998)
Rheotanytarsus photophilus (Goetghebuer) (Chironomidae) (Ashe *et al.* 1998)
Harnischia curtilamellata (Malloch) (Chironomidae) (Langton 2002)
Napomyza tripolii Spencer (Agromyzidae) (Chandler *et al.* 2002)

Species recorded from Britain only in the checklist, but since recorded from Ireland
Erioptera meijerei Edwards (Limoniidae) (Ashe and O'Connor 2001a)
Achyrolimonia decemmaculata (Loew) (Limoniidae) (Ashe *et al.* 1998)

Dicranomyia aperta Wahlgren (Limoniidae) (Ashe *et al.* 1998; in this work *D. lutea* and *D. affinis*, placed in the synonymy of *mitis* in the checklist, were treated as separate species but they are not listed here for the reasons stated in Note 8 in the checklist)
Dicranomyia ventralis (Schummel) (Limoniidae) (Ashe and O'Connor 2000)
Dicranomyia sericata (Meigen) (Limoniidae) (Ashe *et al.* 1998)
Allodia silvatica Landrock (Mycetophilidae) (Chandler *et al.* 2000)
Allodiopsis domestica (Meigen) (Mycetophilidae) (Chandler *et al.* 2000)
Anatella longisetosa Dziedzicki (Mycetophilidae) (Chandler *et al.* 2000)
Brevicornu glandis Laštovka & Matile (Mycetophilidae) (Chandler *et al.* 2000)
Exechiopsis dumitrescae (Burghele-Balacesco) (Mycetophilidae) (Chandler *et al.* 2000)
Pseudexechia parallela (Edwards) (Mycetophilidae) (Chandler *et al.* 2000)
Rymosia affinis Winnertz (Mycetophilidae) (Chandler *et al.* 2000)
Mycetophila perpallida Chandler (Mycetophilidae) (Chandler *et al.* 2000)
Mycetophila signata Meigen (Mycetophilidae) (Chandler *et al.* 2000)
Mycetophila stricklandi Laffoon (Mycetophilidae) (Chandler 2001)
Mycetophila strigata Staeger (Mycetophilidae) (Chandler *et al.* 2000)
Mycetophila uliginosa Chandler (Mycetophilidae) (Chandler *et al.* 2000)
Phronia obtusa Winnertz (Mycetophilidae) (Chandler *et al.* 2000)
Azana anomala (Staeger) (Mycetophilidae) (Chandler *et al.* 2000)
Sciophila fenestella Curtis (Mycetophilidae) (Chandler *et al.* 2000)
Bradysia dolosa Laurence (Sciaridae) (Withers 2002a)
Bradysia pectoralis (Staeger) (Sciaridae) (Chandler *et al.* 2002)
Bradysia polonica (Lengersdorf) (Sciaridae) (Withers 2002a)
Bradysia pratincola Tuomikoski (Sciaridae) (Withers 2002a)
Bradysia vagans (Winnertz) (Sciaridae) (Chandler *et al.* 2002)
Claustropyga abblanda (Freeman) (Sciaridae) (Chandler *et al.* 2002, as *Corynoptera*)
Corynoptera blanda (Winnertz) (Sciaridae) (Chandler *et al.* 2002)
Corynoptera compressa (Walker) (Sciaridae) (Withers 2002a)
Corynoptera curvispinosa Freeman (Sciaridae) (Withers 2002a)
Corynoptera flavicauda (Zetterstedt) (Sciaridae) (Chandler *et al.* 2002)
Corynoptera globiformis (Frey) (Sciaridae) (Withers 2002a)
Corynoptera irmgardis (Lengersdorf) (Sciaridae) (Withers 2002a)
Corynoptera membranigera (Kieffer) (Sciaridae) (Withers 2002a)
Corynoptera parvula (Winnertz) (Sciaridae) (Withers 2002a)
Corynoptera vagula Tuomikoski (Sciaridae) (Withers 2002a)
Cratyna pernitida (Edwards) (Sciaridae) (Withers 2002a)
Cratyna uliginosa (Lengersdorf) (Sciaridae) (Withers 2002a)
Cratyna vagabunda (Winnertz) (Sciaridae) (Withers 2002a)
Cratyna colei (Freeman) (Sciaridae) (Chandler *et al.* 2002)
Cratyna falcifera (Lengersdorf) (Sciaridae) (Withers 2002a)
Epidapus gracilis (Walker) (Sciaridae) (Withers 2002a)
Leptosciarella pilosa (Staeger) (Sciaridae) (Chandler *et al.* 2002)
Leptosciarella scutellata (Staeger) (Sciaridae) (Chandler *et al.* 2002)
Lycoriella conspicua (Winnertz) (Sciaridae) (Chandler *et al.* 2002)
Lycoriella modesta (Staeger) (Sciaridae) (Chandler *et al.* 2002)

Scatopsciara atomaria (Zetterstedt) (Sciaridae) (Chandler *et al.* 2002; all *Scatopsciara* species mentioned were erroneously given as *Scaptosciara* in this paper and in Withers 2002a)
Scatopsciara multispina (Bukowski & Lengersdorf) (Sciaridae) (Chandler *et al.* 2002)
Scatopsciara nana (Winnertz) (Sciaridae) (Withers 2002a)
Scatopsciara pusilla (Meigen) (Sciaridae) (Withers 2002a)
Sciara humeralis Zetterstedt (Sciaridae) (Withers 2002a)
Sciara ulrichi Menzel & Mohrig (Sciaridae) (Chandler *et al.* 2002)
Scythropochroa radialis Lengersdorf (Sciaridae) (Chandler *et al.* 2002)
Trichosia confusa Menzel & Mohrig (Sciaridae) (recorded as *trochanterata* by O'Connor and Ashe 1991 but + omitted in checklist; Withers 2002a)
Trichosia splendens Winnertz (Sciaridae) (recorded by Menzel and Mohrig 1997 but + omitted in checklist; Withers 2002a)
Asphondylia melanopus Kieffer (Cecidomyiidae) (O'Connor and Wistow 1999)
Schizomyia galiorum Kieffer (Cecidomyiidae) (O'Connor 2003)
Contarinia anthobia (F. Löw) (Cecidomyiidae) (O'Connor 2002a)
Contarinia jaapi Rübsaamen (Cecidomyiidae) (O'Connor 2000b)
Contarinia lathyri Kieffer (Cecidomyiidae) (O'Connor and Wistow 1999)
Contarinia loti (De Geer) (Cecidomyiidae) (O'Connor and Wistow 1999)
Cystiphora taraxaci (Kieffer) (Cecidomyiidae) (O'Connor 2000b)
Dasineura kiefferiana (Rübsaamen) (Cecidomyiidae) (O'Connor 2000b)
Dasineura loewiana Rübsaamen (Cecidomyiidae) (O'Connor and Wistow 1999)
Dasineura medicaginis (Bremi) (Cecidomyiidae) (O'Connor and Wistow 1999)
Dasineura oxyacanthae Rübsaamen (Cecidomyiidae) (O'Connor 2002a)
Dasineura spadicea (Rübsaamen) (Cecidomyiidae) (O'Connor and Wistow 1999)
Dasineura thomasiana (Kieffer) (Cecidomyiidae) (O'Connor 2001a)
Jaapiella loticola (Rübsaamen) (Cecidomyiidae) (O'Connor and Wistow 1999)
Rabdophaga cinerearum (Hardy) (Cecidomyiidae) (O'Connor and Wistow 1999)
Rhopalomyia baccarum (Wachtl) (Cecidomyiidae) (O'Connor 2003)
Xenodiplosis laeviusculi (Rübsaamen) (Cecidomyiidae) (O'Connor 2002b)
Tonnoiriella anchoriformis (Salamanna) (Psychodidae) (Withers 2002a)
Psychoda crassipenis Tonnoir (Psychodidae) (Withers 2002a)
Tinearia lativentris Berdén (Psychodidae) (Withers 2002a)
Mormia revisenda (Eaton) (Psychodidae) (Chandler *et al.* 2002)
Threticus balkaneoalpinus Krek (Psychodidae) (Chandler *et al.* 2002)
Thripomorpha cooki Hutson (Scatopsidae) (Withers 2002a)
Scatopse lapponica Duda (Scatopsidae) (Bond *et al.* 2003)
Chaoborus flavicans (Meigen) (Chaoboridae) (O'Connor and Ashe 1999)
Chaoborus pallidus (Fabricius) (Chaoboridae) (Ashe and O'Connor 2001b)
Neurohelea luteitarsis (Meigen) (Ceratopogonidae) (Ashe *et al.* 2002)
Schizohelea leucopeza (Meigen) (Ceratopogonidae) (Ashe *et al.* 2002)
Stilobezzia lutacea Edwards (Ceratopogonidae) (Ashe *et al.* 2002)
Clinohelea unimaculata (Macquart) (Ceratopogonidae) (Ashe and O'Connor 2002)
Probezzia seminigra (Panzer) (Ceratopogonidae) (Ashe *et al.* 2002)
Sphaeromias fasciatus (Meigen) (Ceratopogonidae) (Ashe *et al.* 2002)
Forcipomyia brevicubitus Goetghebuer (Ceratopogonidae) (Ashe and O'Connor 2002)
Chironomus pallidivittatus (Malloch) (Chironomidae) (Langton 2004b)

Chironomus bernensis Klötzli (Chironomidae) (Langton 2002)
Chironomus luridus Stenzke (Chironomidae) (Langton 2002)
Chironomus nuditarsis Keyl (Chironomidae) (Langton 2002)
Chironomus obtusidens Goetghebuer (Chironomidae) (Langton 2002)
Chironomus piger Stenzke (Chironomidae) (Langton 2002)
Chironomus dissidens Walker (Chironomidae) (Langton 2002)
Cryptochironomus denticulatus (Goetghebuer) (Chironomidae) (Langton 2002)
Cryptochironomus obreptans (Walker) (Chironomidae) (Langton 2002)
Glyptotendipes foliicola Kieffer (Chironomidae) (Langton 2002)
Glyptotendipes scirpi (Kieffer) (Chironomidae) (Langton 2004b)
Glyptotendipes glaucus (Meigen) (Chironomidae) (Langton 2002)
Microchironomus tener (Kieffer) (Chironomidae) (Langton 2002)
Microtendipes britteni (Edwards) (Chironomidae) (Langton 2002)
Microtendipes diffinis (Edwards) (Chironomidae) (Langton 2004b)
Parachironomus digitalis (Edwards) (Chironomidae) (Langton 2004b)
Parachironomus mauricii (Kruseman) (Chironomidae) (Langton 2002)
Parachironomus vitiosus (Goetghebuer) (Chironomidae) (Langton 2002)
Tribelos intextus (Walker) (Chironomidae) (Langton 2002)
Cladotanytarsus pallidus Kieffer (Chironomidae) (Langton 2002)
Rheotanytarsus muscicola (Thienemann) (Chironomidae) (Langton 2004b)
Paratanytarsus laetipes (Zetterstedt) (Chironomidae) (Langton 2002)
Paratanytarsus lauterborni (Kieffer) (Chironomidae) (Langton 2002)
Paratanytarsus tenellulus (Goetghebuer) (Chironomidae) (Langton 2002)
Stempellinella minor (Edwards) (Chironomidae) (Langton 2002)
Tanytarsus ejuncidus (Walker) (Chironomidae) (Langton 2002)
Tanytarsus inaequalis Goetghebuer (Chironomidae) (Langton 2004b)
Tanytarsus lestagei Goetghebuer, 1922 (Chironomidae) (as "*lestagei* (aggregate)" in Ashe *et a*
1998; as this species in Langton 2004b)
Tanytarsus longitarsis Kieffer (Chironomidae) (Langton 2004b)
Tanytarsus mendax Kieffer (Chironomidae) (Langton 2002)
Tanytarsus niger Andersen (Chironomidae) (Langton 2004b)
Tanytarsus palmeni Lindeberg (Chironomidae) (Langton 2002)
Tanytarsus recurvatus Brundin (Chironomidae) (Langton 2004b)
Tanytarsus telmaticus Lindeberg, 1959 (Chironomidae) (Langton 2004b)
Acamptocladius reissi Cranston & Saether (Chironomidae) (Murray and Murray 2003)
Chaetocladius melaleucus (Meigen) (Chironomidae) (Langton 2002)
Corynoneura arctica Kieffer (Chironomidae) (Langton 2002)
Corynoneura gratias Schlee (Chironomidae) (Langton 2002)
Corynoneurella paludosa Brundin (Chironomidae) (Langton 2002)
Cricotopus flavocinctus (Kieffer) (Chironomidae) (Langton 2002)
Cricotopus pilosellus Brundin (Chironomidae) (Langton 2002)
Cricotopus polaris Kieffer (Chironomidae) (Langton 2002)
Limnophyes angelicae Saether (Chironomidae) (Murray and Murray 2003)
Limnophyes difficilis Brundin (Chironomidae) (Langton 2004b)
Limnophyes ninae Saether (Chironomidae) (Langton 2004b)
Metriocnemus tristellus Edwards (Chironomidae) (Langton 2004b)

Metriocnemus ursinus (Holmgren) (Chironomidae) (Langton 2004b)
Orthocladius glabripennis (Goetghebuer) (Chironomidae) (Langton 2004b)
Orthocladius ruffoi Rossaro & Prato (Chironomidae) (Langton 2002)
Parakiefferiella smolandica (Brundin) (Chironomidae) (Langton 2002)
Paratrichocladius nigritus (Goetghebuer) (Chironomidae) (Langton 2004b)
Psectrocladius oxyura Langton (Chironomidae) (Langton 2002)
Rheocricotopus atripes (Kieffer) (Chironomidae) (Langton 2004b)
Rheocricotopus effusus (Walker) (Chironomidae) (Langton 2002)
Smittia superata Goetghebuer (Chironomidae) (Langton 2004b)
Thienemanniella obscura Brundin (Chironomidae) (Langton 2004b)
Tanypus vilipennis (Kieffer) (Chironomidae) (Langton 2002)
Chersodromia cursitans (Zetterstedt) (Hybotidae) (Drake 2001a)
Platypalpus excisus (Becker) (Hybotidae) (Chandler *et al.* 2002)
Hilara apta Collin (Empididae) (Chandler *et al.* 2000)
Rhamphomyia tibialis Meigen (Empididae) (Withers 2002a)
Chelifera stigmatica (Schiner) (Empididae) (Chandler *et al.* 2000)
Hemerodromia adulatoria Collin (Empididae) (Withers 2002a)
Hercostomus angustifrons (Staeger) (Dolichopodidae) (Drake 2001a)
Hercostomus blankaartensis Pollet (Dolichopodidae) (Drake 2001a)
Thrypticus nigricauda Wood (Dolichopodidae) (Withers 2002a)
Sympycnus aeneicoxa (Meigen) (Dolichopodidae) (Withers 2002a)
Agathomyia woodella Chandler (Platypezidae) (Chandler *et al.* 2002)
Megaselia angusta (Wood) (Phoridae) (Withers 2002a)
Megaselia bifida Disney (Phoridae) (Withers 2002a)
Megaselia tonyirwini Disney (Phoridae) (Withers 2002a)
Lonchoptera nigrociliata Duda (Lonchopteridae) (Chandler *et al.* 2002)
Eriozona syrphoides (Fallén) (Syrphidae) (Speight 1998)
Chalarus brevicaudis Jervis (Pipunculidae) (Chandler *et al.* 2002)
Chalarus pughi Coe (Pipunculidae) (Chandler *et al.* 2002)
Jassidophaga setosa (Verrall) (Pipunculidae) (Chandler *et al.* 2002)
Cephalops vittipes (Zetterstedt) (Pipunculidae) (Chandler *et al.* 2002)
Cephalops obtusinervis (Zettertstedt) (Pipunculidae) (Chandler *et al.* 2002)
Cephalops semifumosus (Kowarz) (Pipunculidae) (Chandler *et al.* 2002)
Cephalosphaera germanica Aczél (Pipunculidae) (Chandler *et al.* 2002)
Pipunculus hertzogi Rapp (Pipunculidae) (Chandler *et al.* 2002)
Dorylomorpha extricata (Collin) (Pipunculidae) (Chandler *et al.* 2002)
Dorylomorpha xanthopus (Thomson) (Pipunculidae) (Chandler *et al.* 2002)
Neria commutata (Czerny) (Micropezidae) (Chandler *et al.* 2000)
Liopiophila varipes (Meigen) (Piophilidae) (Chandler *et al.* 2002)
Prochyliza nigrimana (Meigen) (Piophilidae) (Chandler *et al.* 2002)
Rhagoletis alternata (Fallén) (Tephritidae) (Alexander 2002)
Homoneura tesquae (Becker) (Lauxaniidae) (Chandler *et al.* 2002)
Cnemacantha muscaria (Fallén) (Lauxaniidae) (Chandler *et al.* 2002)
Meiosimyza platycephala (Loew) (Lauxaniidae) (Chandler *et al.* 2002)
Meiosimyza subfasciata (Zetterstedt) (Lauxaniidae) (Chandler *et al.* 2002)
Minettia filia (Becker) (Lauxaniidae) (Chandler *et al.* 2002)

Minettia rivosa (Meigen) (Lauxaniidae) (Chandler *et al.* 2002)
Poecilolycia vittata (Walker) (Lauxaniidae) (Chandler *et al.* 2002)
Sapromyza albiceps Fallén (Lauxaniidae) (Chandler *et al.* 2002)
Chamaemyia aridella (Fallén) (Chamaemyiidae) (Chandler *et al.* 2002)
Chamaemyia juncorum (Fallén) (Chamaemyiidae) (Chandler *et al.* 2002)
Chamaemyia polystigma (Meigen) (Chamaemyiidae) (Chandler *et al.* 2002)
Colobaea distincta (Meigen) (Sciomyzidae) (Ryder *et al.* 2003)
Meroplius minutus (Wiedemann) (Sepsidae) (Chandler *et al.* 2002)
Agromyza anthracina Meigen (Agromyzidae) (O'Connor 2001b)
Agromyza mobilis Meigen (Agromyzidae) (Chandler *et al.* 2002)
Melanagromyza aenea (Meigen) (Agromyzidae) (Chandler *et al.* 2002)
Melanagromyza dettmeri Hering (Agromyzidae) (O'Connor 2000a)
Aulagromyza orphana (Hendel) (Agromyzidae) (Chandler *et al.* 2002)
Aulagromyza trivittata (Loew) (Agromyzidae) (Chandler *et al.* 2002)
Cerodontha scutellaris (von Roser) (Agromyzidae) (Chandler *et al.* 2002)
Cerodontha morosa (Meigen) (Agromyzidae) (Chandler *et al.* 2002)
Cerodontha imbuta (Meigen) (Agromyzidae) (Chandler *et al.* 2002)
Cerodontha atronitens (Hendel) (Agromyzidae) (Chandler *et al.* 2002)
Liriomyza eupatorii (Kaltenbach) (Agromyzidae) (Chandler *et al.* 2002)
Liriomyza pusio (Meigen) (Agromyzidae) (Chandler *et al.* 2002)
Phytoliriomyza pteridii Spencer (Agromyzidae) (Spencer 1973, but + omitted in checklist: Chandler *et al.* 2002)
Phytomyza solidaginis Hendel (Agromyzidae) (Chandler *et al.* 2002)
Phytomyza wahlgreni Rydén (Agromyzidae) (Chandler *et al.* 2002)
Geomyza balachowskyi Mesnil (Opomyzidae) (Chandler *et al.* 2002)
Stenomicra cogani Irwin, 1982 (Stenomicridae) (Withers 2002b)
Meoneura flavifacies Collin (Carnidae) (Withers 2002a)
Pelomyiella mallochi (Sturtevant) (Tethinidae) (Chandler *et al.* 2002)
Xanthocanace ranula (Canacidae) (Withers 2002a)
Chlorops obscurellus (Zetterstedt) (Chloropidae) (Ismay *et al.* 2001)
Chlorops planifrons (Loew) (Chloropidae) (Ismay *et al.* 2001)
Chlorops troglodytes (Zetterstedt) (Chloropidae) (Ismay *et al.* 2001)
Cryptonevra flavitarsis (Meigen) (Chloropidae) (Ismay *et al.* 2001)
Eurina lurida Meigen (Chloropidae) (Ismay *et al.* 2001)
Meromyza nigriventris Macquart (Chloropidae) (Ismay *et al.* 2001)
Meromyza rufa Fedoseeva (Chloropidae) (Ismay *et al.* 2001)
Pseudopachychaeta approximatonervis (Zetterstedt) (Chloropidae) (Ismay *et al.* 2001)
Thaumatomyia hallandica Andersson (Chloropidae) (Ismay *et al.* 2001)
Aphanotrigonum femorellum Collin (Chloropidae) (Ismay *et al.* 2001)
Aphanotrigonum trilineatum (Meigen) (Chloropidae) (Ismay *et al.* 2001)
Conioscinella frontella (Fallén) (Chloropidae) (Ismay *et al.* 2001)
Conioscinella gallarum (Duda) (Chloropidae) (Ismay *et al.* 2001)
Conioscinella nigrifrons Duda (Chloropidae) (Ismay *et al.* 2001)
Dicraeus vagans (Meigen) (Chloropidae) (Ismay *et al.* 2001)
Elachiptera diastema Collin (Chloropidae) (Ismay *et al.* 2001)
Elachiptera megaspis (Loew) (Chloropidae) (Ismay *et al.* 2001)

Elachiptera tuberculifera (Corti) (Chloropidae) (Ismay *et al.* 2001)
Eribolus nanus (Zetterstedt) (Chloropidae) (Ismay *et al.* 2001)
Eribolus slesvicensis (Becker) (Chloropidae) (Ismay *et al.* 2001)
Gaurax fascipes Becker (Chloropidae) (Ismay *et al.* 2001)
Lasiambia palposa (Fallén) (Chloropidae) (Ismay 2000)
Oscinella angularis Collin (Chloropidae) (Ismay *et al.* 2001)
Oscinella hortensis Collin (Chloropidae) (Ismay *et al.* 2001)
Oscinella pusilla (Meigen) (Chloropidae) (Ismay *et al.* 2001)
Oscinella vastator (Curtis) (Chloropidae) (Ismay *et al.* 2001)
Oscinimorpha minutissima (Strobl) (Chloropidae) (Ismay *et al.* 2001)
Oscinisoma cognatum (Meigen) (Chloropidae) (Ismay *et al.* 2001)
Oscinisoma germanicum (Duda) (Chloropidae) (Ismay *et al.* 2001)
Rhopalopterum anthracinum (Meigen) (Chloropidae) (Ismay *et al.* 2001)
Speccafrons halophila (Duda) (Chloropidae) (Ismay *et al.* 2001)
Trachysiphonella scutellata (von Roser) (Chloropidae) (Ismay *et al.* 2001)
Tricimba cincta (Meigen) (Chloropidae) (Ismay *et al.* 2001)
Tricimba lineella (Fallén) (Chloropidae) (Ismay *et al.* 2001)
Gymnomus caesius (Meigen) (Heleomyzidae) (Chandler *et al.* 2002)
Morpholeria ruficornis (Meigen) (Heleomyzidae) (Chandler *et al.* 2002)
Neoleria maritima (Villeneuve) (Heleomyzidae) (Chandler *et al.* 2002; also added by O'Connor and Speight 2002)
Neoleria ruficauda (Zetterstedt) (Heleomyzidae) (Chandler *et al.* 2002)
Neoleria ruficeps (Zetterstedt) (Heleomyzidae) (Chandler *et al.* 2002)
Scoliocentra villosa (Zetterstedt) (Heleomyzidae) (Chandler *et al.* 2002)
Eccoptomera obscura (Meigen) (Heleomyzidae) (Chandler *et al.* 2002)
Oecothea fenestralis (Fallén) (Heleomyzidae) (Chandler *et al.* 2002)
Tephrochlaena halterata (Meigen) (Heleomyzidae) (Chandler *et al.* 2002)
Tephrochlamys flavipes (Zetterstedt) (Heleomyzidae) (Chandler *et al.* 2002)
Trixoscelis frontalis (Fallén) (Heleomyzidae) (Chandler *et al.* 2002)
Borborillus uncinatus (Duda) (Sphaeroceridae) (Speight and Healy 1977, but + omitted in checklist; Nash *et al.* 2001)
Apteromyia claviventris (Strobl) (Sphaeroceridae) (Nash *et al.* 2001)
Herniosina bequaerti (Villeneuve) (Sphaeroceridae) (Nash *et al.* 2001)
Leptocera oldenbergi (Duda) (Sphaeroceridae) (Nash *et al.* 2001)
Minilimosina albinervis (Duda) (Sphaeroceridae) (Withers 2002a)
Minilimosina gemella Roháč ek (Sphaeroceridae) (Withers 2002a)
Phthitia plumosula (Rondani) (Sphaeroceridae) (Withers 2002a)
Spelobia parapusio (Dahl) (Sphaeroceridae) (Nash *et al.* 2001)
Spelobia pseudosetaria (Duda) (Sphaeroceridae) (Nash *et al.* 2001)
Telomerina pseudoleucoptera (Duda) (Sphaeroceridae) (Withers 2002a)
Terrilimosina schmitzi (Duda) (Sphaeroceridae) (Withers 2002a)
Trachyopella leucoptera (Haliday) (Sphaeroceridae) (Nash *et al.* 2001)
Trachyopella lineafrons Spuler (Sphaeroceridae) (Nash *et al.* 2001)
Trachyopella melania (Haliday) (described from Irish types but + omitted in checklist; Nash *et al.* 2001)
Ischiolepta scabricula (Haliday) (Sphaeroceridae) (Nash *et al.* 2001)

Chymomyza fuscimana (Zetterstedt) (Drosophilidae) (Chandler *et al.* 2000)
Drosophila limbata von Roser (Drosophilidae) (Chandler *et al.* 2002)
Drosophila picta Zetterstedt (Drosophilidae) (Chandler *et al.* 2002)
Drosophila fenestrarum Fallén (Drosophilidae) (Chandler *et al.* 2002)
Coenia curvicauda (Meigen) (Ephydridae) (Chandler *et al.* 2002)
Limnellia surturi Andersson (Ephydridae) (Chandler *et al.* 2002)
Notiphila dorsata Stenhammar (Ephydridae) (Chandler *et al.* 2002)
Hydromyza livens (Fabricius) (Scathophagidae) (Chandler *et al.* 2002)
Norellisoma opacum (Loew) (Ephydridae) (Chandler *et al.* 2002; assigned in error to *N. lituratum* in the checklist)
Helina ciliatocosta (Zetterstedt) (Muscidae) (Chandler *et al.* 2000)
Helina maculipennis (Zetterstedt) (Nash and Chandler 1978, but + omitted in checklist; Chandler *et al.* 2002)
Melinda gentilis Robineau-Desvoidy (Calliphoridae) (Chandler *et al.* 2000)
Pollenia griseotomentosa (Jacentkowský) (Calliphoridae) (Chandler *et al.* 2000)
Pollenia viatica Robineau-Desvoidy (Calliphoridae) (Chandler *et al.* 2000)
Macronychia polyodon (Meigen) (Sarcophagidae) (Chandler *et al.* 2000)
Oebalia minuta (Fallén) (Sarcophagidae) (O'Connor and Ronayne 2003)
Compsilura concinnata (Meigen) (Tachinidae) (Chandler *et al.* 2000)
Loewia foeda (Meigen) (Tachinidae) (Chandler *et al.* 2000)
Pelatachina tibialis (Fallén) (Tachinidae) (Smith 2004)
Siphona ingerae Andersen (Tachinidae) (Chandler *et al.* 2000)
Siphona maculata Staeger (Tachinidae) (Chandler *et al.* 2000)

Acknowledgements
Dr J.P. O'Connor kindly checked and corrected the details of this summary. Peter Langton advised on the Chironomidae.

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Corrections and changes to the Diptera Checklist (10) - Editor

It is intended to publish here any corrections to the text of the latest Diptera checklist (publication date was 13 November 1998: the final 'cut-off' date for included information was 17 June 1998) and to draw attention to any subsequent changes. All readers are therefore asked to inform me of any errors or changes and I would like to thank all those who have already brought these to my attention. Zoological Record for 2002 has been consulted and consequent changes are given here.

In the notes below where names of genera and species are given as in the Checklist, authorship is not stated here. Corrections are listed under the relevant page numbers. Changes are listed under families; names new to the British Isles list are given in bold type.

The notes below refer to the loss of no names due to synonymy and addition of 12 species, of which one is an introduced species, resulting in a new total of 6778 species.

Corrections

p. 10 The author of *Diadocidia* should be Ruthe without an accent on the final letter. The name appears correctly on p. 49 under *Mochlonyx velutinus*

Changes

Cecidomyiidae. The following species was added by K.M. HARRIS (2003. A new species of gall midge, *Janetiella frankumi*, inducing stem galls on burnet rose (*Rosa pimpinellifolia*). *Cecidology* **18**(2), 51-55):

Janetiella ***frankumi*** Harris, 2003

The following species was added by K.P. BLAND, I.M. EVANS and K.M. HARRIS (2003. The gall midge *Geocrypta rostriformis* Fedotova in Scotland and northern England. *Cecidology* **18**(2), 57-59):
Geocrypta ***rostriformis*** Fedotova, 1997

Psychodidae. The new name **VAILLANTODES** Wagner, 2001 was proposed by R. WAGNER (2001. Contribution to the knowledge of Spanish Psychodidae (Diptera), with description of two new species. *Zoologica Baetica* **12,** 83-90) to replace *Vaillantia*, which was noted to be preoccupied in the checklist.

The following are added in the present issue, as well as formal addition of *Pericoma sziladyi*, added in the checklist:
Trichomyia ***minima*** Withers, 2004
Trichomyia ***parvula*** Szabó, 1960
SARAIELLA Vaillant, 1973 (to follow *Pericoma* in the checklist)
Saraiella ***consigliana*** (Sara, 1953 – *Pericoma*)

Culicidae. Raising of the subgenus **OCHLEROTATUS** Lynch Arribalzaga, 1891 to generic rank is now generally accepted (Keith Snow *pers. comm.*) but attention has not been drawn to this in British literature. This change results from J.F. REINERT (2000. New classification for the composite genus *Aedes* (Diotera: Culicidae; Aedini); elevation of subgenus *Ochlerotatus* to generic rank, reclassification of the subgenus, and notes on certain subgenera and species. *Journal of the American Mosquito Control Association* **16**(3), 175-188). Only subgenera AEDES and AEDIMORPHUS remain in *Aedes*. *Ochlerotatus* includes three subgenera: **FINLAYA** (for *A. geniculatus* as in the checklist), **RUSTICOIDUS** for *A. rusticus* and **OCHLEROTATUS** sensu stricto for the remaining ten species.

Chironomidae. The following species was recorded from Ireland by P.H. LANGTON (2002. A preliminary survey of the non-biting midges (Diptera: Chironomidae) of Northern Ireland. *Bulletin of the Irish Biogeographical Society* **26,** 14-28.), but without indication that it was new to the British Isles. It is newly recorded from Britain in the present issue.
Chironomus (*Chironomus*) ***nudiventris*** Ryser, Scholl & Wülker, 1983 +

The following changes result from a paper by P.H. LANGTON in the present issue:
Cryptochironomus ***defectus*** (Kieffer, 1917) ++ is new to the British Isles, from Ireland
Tanytarsus ***telmaticus*** Lindeberg, 1959 = *simulans* Lindeberg, 1967 (synonymy according to Torbjorn Ekrem, *pers. comm.* to P.H. Langton)

Empididae. *Hilara* ***quadrifasciata*** Chvála, 2002 was proposed as a replacement name for *H. quadrivittata* as this was found to be a misidentification by M. CHVÁLA (2002. Revision of European species of the *Hilara* "*quadrivittata*" group (Diptera: Empididae). *Acta Universitatis Carolinae Biologica* **46**, 229-276).

Dolichopodidae. *Medetera* ***grisescens*** de Meijere, 1916 was added in an exhibit by A.J. HALSTEAD at the 2002 BENHS Annual Exhibition (2003. *British Journal of Entomology and Natural History* **16,** 179). It was found in a heated glasshouse at the RHS Garden, Wisley and is an

introduced species. It was described from Indonesia and is widespread in the Oriental and Australasian Regions, as well as the eastern Palaearctic (Japan). The author's name was given erroneously as "Meig."

Ulidiidae. Replacement of *Herina germinationis* by *nigrina* (see Review of Dutch checklist above) is necessary because it is preoccupied in *Musca* by Linnaeus, 1758 (*Opomyza germinationis*). Also restoration of *Herina lugubris* as the valid name for *H. longistylata* has resulted from B. MERZ (2002. A revision of the *Herina lugubris* species group (Diptera: Ulidiidae, Otitinae), with the description of two new species. *Revue Suisse de Zoologie* **109**(2), 407-431):
Herina ***lugubris*** (Meigen, 1826 – *Ortalis*) = *longistylata* Rivosecchi, 1992
Herina ***nigrina*** (Meigen, 1826 – *Ortalis*) = *germinationis* (Rossi, 1790 - *Musca*), preocc.

Lauxaniidae. The following changes result from B. MERZ 2003. The Lauxaniidae (Diptera) described by C.F. Fallén with description of a misidentified species of *Homoneura* van der Wulp. *Insect Systematics & Evolution* **34,** 345-360):
Homoneura ***mediospinosa*** Merz, 2003 = *interstincta*: Collin, 1948 and subsequent authors, misident. (Collin's description of the genitalia fitted this rather than true *interstincta*)
Homoneura ***notata*** (Fallén, 1820 – *Sapromyza*) = *subnotata* Papp, 1978 (this synonymy restores the name *notata*, previously used for this species)

Agromyzidae. The following additions made by K.P. BLAND (2001. Agromyzid flies (Diptera: Agromyzidae) new to Britain. *Glasgow Naturalist* **23,** 49-50) have been overlooked previously. This paper also includes a record of *Phytomyza soenderupi*, added in the checklist on other material, but not previously formally added to the British list:
Melanagromyza ***astragali*** Spencer, 1976
Phytomyza ***caulinaris*** Hering, 1949

Drosophilidae. Note 2 referred to generic rank for some subgenera of *Drosophila*, **HIRTODROSOPHILA**, **LORDIPHOSA** and **SCAPTODROSOPHILA**, having been proposed by Grimaldi (1990). This was not then followed but is now widely recognised and is to be adopted in the forthcoming RES Handbook to the British Drosophilidae. All species were described in *Drosophila* so brackets are required for author's names in all cases.

Anthomyiidae. The following changes, consequent to the revision of Nearctic Anthomyiidae by G. C. D. GRIFFITHS (2003. *Flies of the Nearctic Region*. Volume VIII. Cyclorrhapha II (Schizophora: Calyptratae) Part 2, Anthomyiidae, No **14,** 2289-2484 [published June, 2003], are reported in the present issue:
Egle ***inermis*** Ackland, 1970 = *bicaudata*: Ackland, 1989, misident.
Egle ***lyneborgi*** Ackland & Griffiths, 2003 is new to Britain

In the same work (Griffiths 2003: 2388) *Chirosia latipennis* is transferred to *Lasiomma*; as *Lasiomma* is neuter in gender, *latipennis* becomes *latipenne*. Since *latipennis* was the type species of ACROSTILPNA Ringdahl, 1929 this is transferred from the synonymy of *Chirosia* to that of *Lasiomma*:
Lasiomma latipenne (Zetterstedt, 1838 - *Anthomyza*)

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