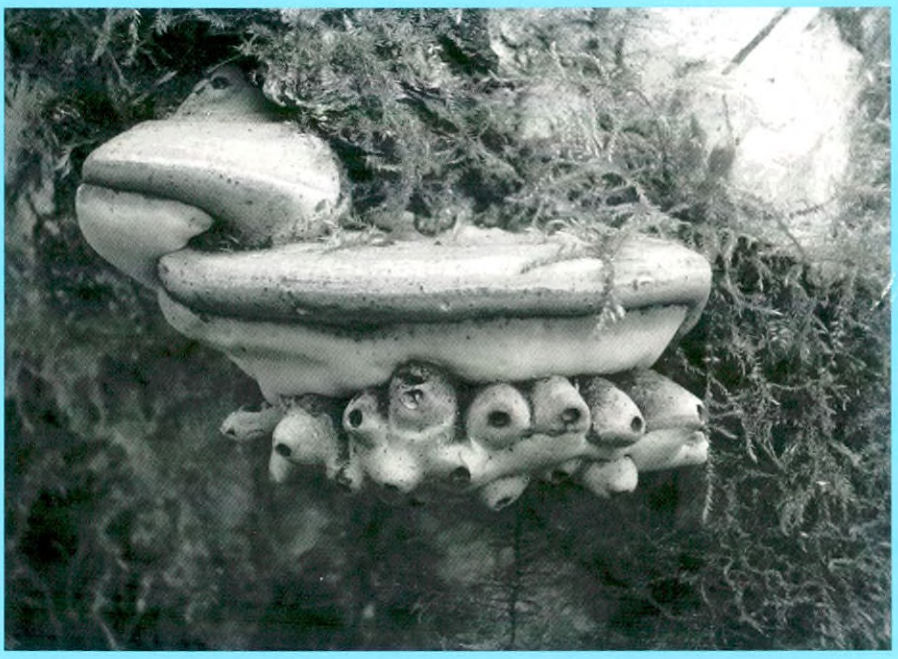
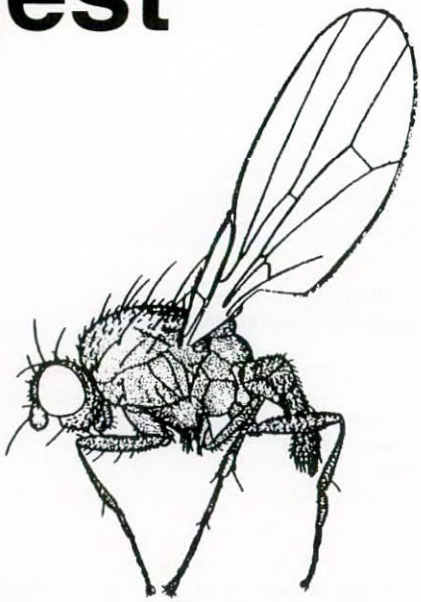
Dipterists Digest



2008 Vol. 15 No. 1

Cover illustration: galls of *Agathomyia wankowiczii* (Schnabl, 1884) (Diptera, Platypezidae) on underside of brackets of *Ganoderma applanatum*, apertures at ends of galls indicating that the larva has emerged to pupate. Found at Spartum Fen, Oxfordshire, Summer 2008 by Judy Webb. With thanks to the photographer Curt Lamberth.

Dipterists Digest



Vol. 15 No. 1

Second Series

2008 Published 29th August 2008

Published by

Dipterists Forum

ISSN 0953-7260

Dipterists Digest

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 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 and those new to regions, countries etc.;
- local faunal accounts and field meeting results, especially if accompanied by good ecological or natural history interpretation;
- descriptions of species new to science;
- notes on identification and deletions or amendments to standard key works and checklists.

Articles must not have been accepted for publication elsewhere and should be written in clear and concise English. Items exceeding 3000 words may be serialised or printed in full, depending on competition for space. **Contributions should preferably be supplied either as E-mail attachments or on 3.5" computer disc or CD in Word or compatible formats and accompanied by hard copy.**

NEW INSTRUCTIONS: Articles should be supplied in A5 format with text in 9-point font, title 12 point and author's name 10.5 point, with 0.55" side margins. Figures should be supplied separately as jpg or eps files to fit in the above page format, or as hard copy.

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. References to journals should give the title of the journal in full. Scientific names should be italicised. Authors of scientific names should be given in full and nomenclature should follow the most recent checklist, unless reflecting subsequent changes. Figures should be drawn in clear black ink, about 1.5 times their printed size and lettered clearly. **Colour photographs will also be considered.** 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.

Articles and notes for publication should be sent to the Editor at the address given above. Enquiries about subscriptions and information about the **Dipterists Forum** should be addressed to the Membership Secretary, Mick Parker, 9 East Wyld Road, Weymouth, Dorset DT4 0RP, UK

Dipterists Digest 2008 **15,** 1-4

The puparium of *Diastata costata* Meigen (Diptera, Diastatidae)

GRAHAM E. ROTHERAY
National Museums Collection Centre, 242 West Granton Road, Edinburgh EH5 1JA

Summary
The early stages of the Diastatidae are apparently unknown. A puparium of *Diastata costata* Meigen is described in this paper. The single specimen is associated with a reared male in the collection of the Zoological Museum, Copenhagen.

Introduction
The Diastatidae are part of the Drosophiloidea. The status of this family and its systematic position was clarified by Chandler (1987). British *Diastata* species were revised by Chandler (1986). According to Chandler (1987) the early stages of the Diastatidae are unknown. A puparium associated with a reared adult male of *Diastata costata* Meigen, 1830 was found in the collection of the Zoological Museum, Copenhagen. It is described here.

Methods
The puparium had been glued to a piece of card. This obscured details of the ventral surface. To reveal these details and extract the head skeleton from the interior, apicoventral surface of the puparium, it was immersed in a concentrated solution of KOH for approximately 30 minutes. After this time the glue had dissolved and the puparium came away easily from the card. The upper apical surface of the puparium had split on emergence of the adult but was still attached. This plate was removed from the puparium to expose the head skeleton. Unfortunately this revealed that the head skeleton was broken across the ventral cornua. The anterior part of the head skeleton containing the mandible, intermediate and basal sclerites were intact and carefully loosened from the puparium using pins. The head skeleton was examined with a binocular microscope in a solid watch glass containing glycerol. It was rotated using pins to obtain views at a variety of angles. This enabled translucent parts of the head skeleton and those orientated in more than one plane to be traced. Drawings were made using a drawing tube attached to the microscope. Measurements were made using a measuring eyepiece. Terms follow Courtney *et al.* (2000) and Rotheray and Gilbert (2008).

Results
Puparium of *Diastata costata* Meigen
Length 2.5mm, width 1.5mm, truncate posteriorly and anteriorly. Thorax dorsoventrally flattened, abdomen and anal segment subcyclindrical. Puparium split dorsolaterally to first abdominal segment to facilitate emergence of the adult (Fig. 1).

Head skeleton (broken in two, Fig. 2): length 0.05mm, strongly sclerotised and dorsal and ventral cornua about equal in length and width. Dorsal cornu with an elongate apical 'window', a strip without sclerotisation (Fig. 2). Cibarial ridges (= ventral pharyngeal ridges)

apparently absent. Intermediate sclerite narrow in lateral view and expanded anteriorly in dorsal view forming epicondyles, which articulate with the mandibles. Posteriorly, intermediate sclerite separate from the basal sclerite. Mandibles separate and with a subrectangular base and a broad (>half width of subrectangular base), slightly curved apical hook. Beneath each mandible a comma-shaped dental sclerite is present. Basal sclerite with parastomal bars extending over the intermediate sclerite and dorsal bridge present.

Anterior spiracles at anterior apex of the puparium (Fig. 1). Anterior spiracles length 0.16mm, bifurcate with posterior arm broader than anterior arm and margin with 4-5 spiracular openings (Fig. 3).

Integument matt and without vestiture. However, dorsum of abdominal segments 1-7 with spicules loosely arranged in four bands, with the spicules uniform in size. Ventrally spicule bands forming numerous inclined rows occupying about half segment width and spicules also uniform in size.

Anal segment with six pairs of triangular, about equal-sized, fleshy projections surrounding the paired posterior respiratory organs (Fig. 4). Integument of anal segment leathery. Anus opening parallel with longitudinal axis of the body and surrounded by a pair of semi-circular shaped lobes. Apex of anal segment with posterior breathing organs borne on elongate (about 1.5x as long as fleshy projections), lightly sclerotised and out-turned basal projections. Each spiracular plate indented, with three pairs of openings curving down the rim. Cuticular scar at centre of each spiracular plate.

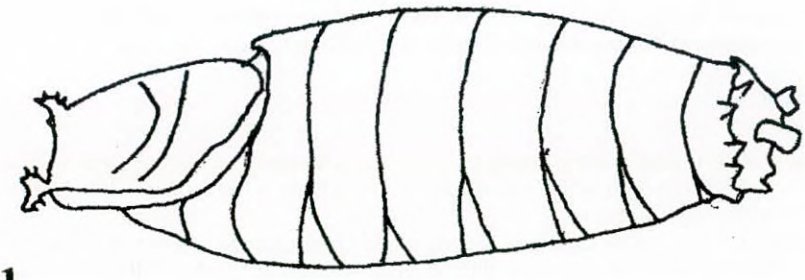
Material examined

One puparium with associated adult identified as *Diastata costata*, confirmed by P.J. Chandler, labelled "♂13/3 10, Skovroddam [? two words not deciphered] 28/4 Kryger", interpreted as: Denmark, NEZ (= N.E. Zealand), Holte Skov, Skovrøddam [= pond in Rude Skov], collected 13.iii.1910, adult emerged 28.iv, leg. J.P. Kryger (received at ZMUC with W. Lundbeck collection).

Discussion

The shape of the puparium with a dorsoventral flattened thorax is shared with most drosophilid puparia. The anal segment with fleshy triangular-shaped projections is also a feature shared with drosophilid third stage larvae (see figures in Ferrar 1987). The presence of spicules on both the dorsal and ventral margins is also a feature of drosophilid larvae and not necessarily a sign of larvae that tunnel, where such a pattern of spicules facilitate gripping the sides of the tunnel to prevent slippage during locomotion. However, the bifurcated anterior spiracles may be a feature that distinguishes diastatid from drosophilid early stages. However, with so few early stages known in both families, such a distinguishing feature can only be viewed as provisional.

The head skeleton with its relatively heavy sclerotisation, large mandible and lack of cibarial ridges suggests feeding on relatively firm material. Cibarial ridges are part of a filtering mechanism (Dowding 1967) in the head skeleton and are considered to be a feature of saprophagous larvae. However, not all saprophagous larvae possess these ridges (e.g. certain species of saproxylic *Lonchaea* (Lonchaeidae), unpublished observations).



Figs 1-4. Puparium of *Diastata costata* Meigen: 1, whole puparium, length 2.5mm, anterior end to the left; 2, head skeleton, length 0.05mm, lateral view, mandible to the left; 3, anterior spiracle, length 0.16mm, lateral view; 4, anal segment, apical view, dorsal margin uppermost.

Acknowledgements
I am grateful to Peter Chandler for offering me the opportunity to describe the puparium of this species and to Thomas Pape for interpreting the label

References

Chandler, P.J. 1986. The British species of *Diastata* Meigen and *Campichoeta* Macquart (Diptera, Drosophiloidea). *Proceedings of the British Entomological and Natural History Society* **19,** 9-16.

Chandler, P.J. 1987. The families Diastatidae and Campichoetidae (Diptera, Drosophiloidea) with a revision of Palaearctic and Nepalese species of *Diastata* Meigen. *Entomologica scandinavica* **18,** 1-50.

Courtney, G.W., Sinclair, B.J. and Meier, R. 2000. Morphology and terminology of Diptera larvae. **In** Papp, L. and Darvas, B (Eds) *Contributions to a Manual of Palaearctic Diptera* **1,** 85-161.

Dowding, V.M. 1967. The function and ecological significance of the pharyngeal ridges occurring in the larvae of some cyclorrhaphous Diptera. *Parasitology Cambridge* **57,** 371-388.

Ferrar, P. 1987. A Guide to the Breeding Habits and Immature Stages of Diptera Cyclorrhapha (Part 1: text). *Entomonograph* **8,** 478 pp. E.J. Brill/Scandinavian Science Press; Leiden and Copenhagen.

Rotheray, G.E. and Gilbert, F.S. 2008. Phylogenetic relationships and the larval head of the lower Cyclorrhapha (Diptera). *Zoological Journal of the Linnean Society* **153,** 287-323.

A further record of *Opesia grandis* (Egger, 1860) (Diptera, Tachinidae) from Cambridgeshire - Following the discovery of *Opesia grandis* (Egger, 1860) on the Devils Ditch in Cambridgeshire during 2006 (Perry, I. 2006 *Dipterists Digest* (*Second Series*) **13,** 93-95), I was surprised to find one here in my garden the following year.

A single female was found on the flowers of a cultivated variety of *Eryngium planum* at the top of my garden at Lode, Cambridgeshire (TL531627) on 29 July 2007. The same individual, or one very similar, was seen on the same row of flowers a few days earlier, but evaded capture. *Opesia grandis* was suspected after the first sighting, although the smaller size (body length 7mm compared with 10 mm of the males found in 2006), gave cause for doubt. The top of my garden abuts onto a row of allotments in various states of cultivation, fringed on three sides by mature hedgerows. In recent years the Green shieldbug *Palamena prasina* (Linnaeus) (Hemiptera, Pentatomidae) has become quite frequent in the garden and the surrounding area and would seem to be a plausible host. My garden is only just over 3 miles SW of the Devils Ditch and the original discovery, although a much wider distribution in South Cambridgeshire now seems more likely - **IVAN PERRY,** 27 Mill Road, Lode, Cambridge, CB25 9EN

Dipterists Digest 2008 **15,** 5-12

Scaptomyza adusta (Loew, 1862) (Diptera, Drosophilidae) at the Durham University Botanic Garden

PETER J. CHANDLER, JOHN W. ISMAY*, BARBARA ISMAY* and GRAHAM E. ROTHERAY†

606B Berryfield Lane, Melksham, Wilts SN12 6EL

*67 Giffard Way, Long Crendon, Aylesbury, Buckinghamshire, HP18 9DN

† National Museums Collection Centre, 242 West Granton Road, Edinburgh EH5 1JA

Summary

Adults of *Scaptomyza adusta* (Loew, 1862) were numerous in a hothouse at the Durham University Botanic Garden and were mostly attracted to inflorescences of the South American perennial *Costus arabicus*. An inflorescence was removed and many adults were later reared from this inflorescence. The puparium is described and compared to other species of the genus. Although it has been widely introduced to southern Europe, *S. adusta* has not previously been recorded from the British Isles and was probably introduced with plant material, either from within its European range or from part of Central or South America where both it and *Costus arabicus* are indigenous.

Introduction

During the Dipterists Forum summer field meeting based at Durham in 2005 the weather deteriorated, reducing the potential for external fieldwork and some members of the party pursued other activities. On 6 July Ken and Rita Merrifield visited the Durham University Botanic Garden and noticed small flies around the tall bushy perennial *Costus arabicus*, a member of the ginger family (Zingiberaceae) in a hothouse there. They informed other members of the party, who decided to investigate.

A visit to the Garden was then made on the following day 7 July 2005 by three of us (PJC, JWI, BI) and Judy Webb. During this visit many flies were observed in flight and settling on all parts of *Costus arabicus* and nearby surfaces. It was quickly recognised that they were a drosophilid species not previously recorded in Britain. They evidently belonged to the genus *Scaptomyza* Hardy, 1849 but differed from species of that genus previously known from Britain by the presence of a small spot at the tip of the wing.

The flies were particularly attracted to the inflorescences, which are ovoid and comprise close-set bracts around the bases of the pendulous whitish flowers. As there was some decay of the flowers and other tissue of the inflorescence it was concluded that female flies might be ovipositing on the flower head. Accordingly a single inflorescence was removed by PJC and brought away for subsequent examination. After a few weeks, continuing through August 2005, a large number of adults had emerged from this inflorescence and puparia were retrieved.

Methods

The adult flies were checked against the key by Bächli *et al.* (2004), which includes species found in northern Europe as well as some of those that have been introduced to Europe from other parts of the world. They apparently ran to *Scaptomyza unipunctum* (Zetterstedt, 1847), but there was some doubt because that species has an apical wing spot only in the male while our specimens have this spot equally developed in both sexes. The presence of a strong bristle on the hind trochanter led to *S. unipunctum* in the key but examination of the male genitalia showed differences from the figures of *S. unipunctum* and they more resembled the Nearctic species *S. adusta* (Loew, 1862), which has been recorded as introduced to southern Europe and the Atlantic Islands (Bächli *et al.* 2004) and is included in the key, but as lacking a strong bristle on the hind trochanter. Specimens were forwarded to Gerhard Bächli, who confirmed these conclusions.

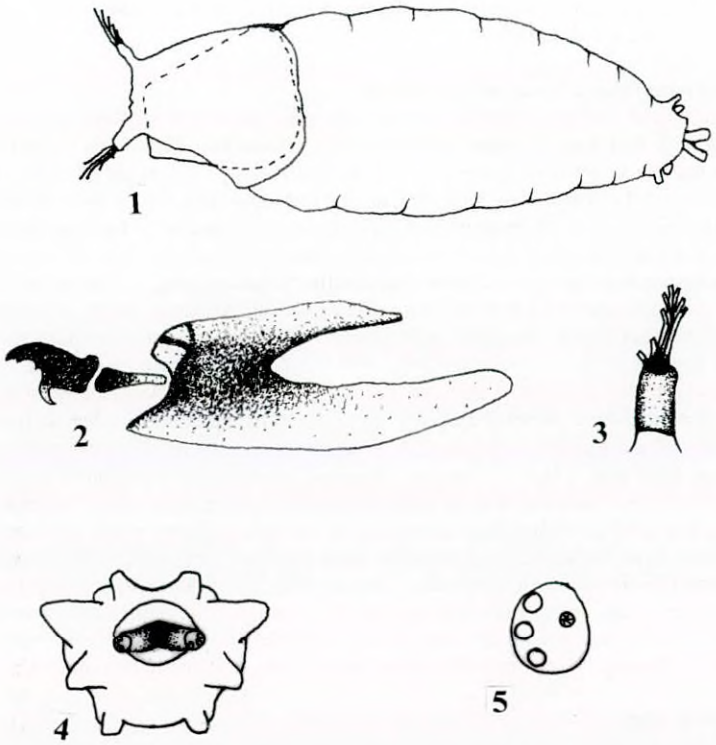
The inflorescence that was removed was about 70mm in length and about 50mm in diameter. It was placed on coir fibre. Many adults emerged during late July and August 2005, confirming that the flies were successfully developing in the tissues of this plant. Puparia, including some from which adults had emerged, were found to be adhering to the surface of the bracts or loose amongst the coir fibre. Some of these were forwarded to GER so that a description could be provided.

Distribution and biology

Scaptomyza adusta is widely distributed in both North and South America (Wheeler and Takada *op. cit.*) and has a distribution including the range of *Costus arabicus*, but has been recorded in Italy as associated with spinach cultivation (Nicoli Aldini and Baviera 2002 and 2004, Nicoli Aldini 2005) and again from Italy at the Bosco della Fontana reserve (Bächli 2004). It has been also been recorded from Turkey, Greece, Malta, the Canary Islands and Azores (Bächli 2005; accessed May 2008). It is concluded that this species was first introduced to the Botanic Garden in plant material and has become established there, but it is unknown whether this was from a European source or directly from the New World. It appears that the association with *Costus arabicus* is not exclusive and it was apparently making use of an available food source.

Several species of the subgenus *Scaptomyza* sensu stricto are known to be leaf miners as larvae but according to Ferrar (1987) other subgenera are mainly saprophagous. A Japanese species of subgenus *Hemiscaptomyza* Hackman, 1959, *S. okadai* Hackman, 1959 has been reared from decaying leaves (Kimura *et al.* 1977). In *Parascaptomyza*, *S. pallida* is well known to develop in various decaying plant material (Ferrar 1987).

In *S. adusta* the Italian records indicate that damage to crops was occurring, suggesting phytophagy but this is clearly non-specific and may involve larval feeding only where there is some decay already present. As indicated in the description of the puparium, the head skeleton in *S. adusta* lacks cibarial ridges as in the species of *Scaptomyza* sensu stricto studied, which are leaf miners. This suggests phytophagy in *S. adusta* or perhaps facultative, or specialised saprophagy as in certain *Lonchaea* species (Lonchaeidae) (GER unpublished observations). Malloch (1915) reared *S. adusta* from a sap exudation on a mulberry tree in Illinois, USA, suggesting a tendency towards saprophagy.



Figs 1-4. Puparium of *Scaptomyza adusta*: 1, whole puparium, length 2.5mm, anterior end to the left; 2, head skeleton, length 0.05mm, lateral view, mandible to the left; 3, anterior spiracle, length 0.3mm, lateral view; 4, anal segment, apical view, dorsal margin uppermost; 5, posterior spiracular plate, dorsal margin uppermost.

The puparium of *Scaptomyza adusta*

Malloch (*op. cit.*) gave a brief and generalised description and figures of the puparium. Sturtevant (1921), Patterson (1943) and Throckmorton (1962) briefly considered the anterior spiracles and head skeleton.

The puparium described here is similar to the species of *Scaptomyza* sensu stricto studied by GER, i.e. *S. flava* (Fallén, 1823) and *S. graminum* (Fallén, 1823). The three species can be separated by the anterior spiracles, which are bifurcated in *S. flava*, arranged

around a central stem in *S. graminum* and are of varying length emerging from the apex of a common base in *S. adusta*. The three species can also be separated by the mandibles, which lack accessory teeth in *S. flava*; these teeth are present in *S. graminum* and *S. adusta*, but only *S. adusta* has a curved apicoventral projection.

Description of puparium of *Scaptomyza adusta*

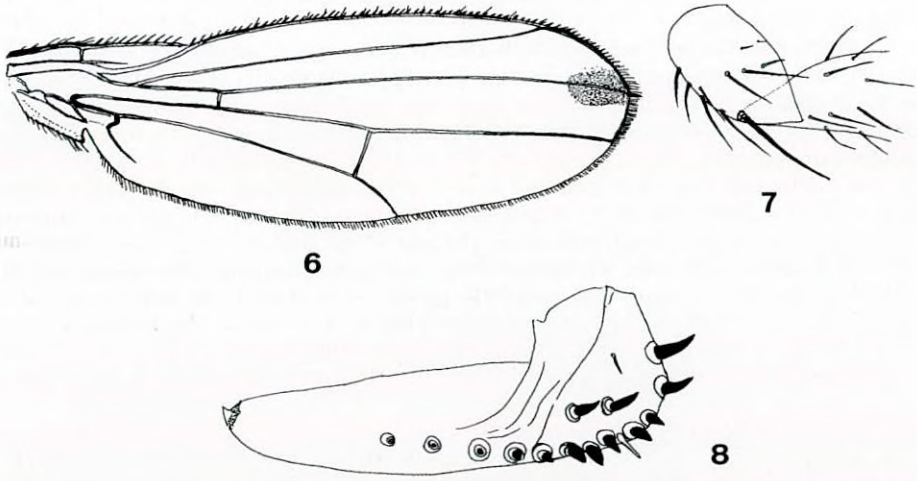
Length 2.5mm, width 1.5mm, truncate posteriorly and anteriorly. Thorax dorsoventrally flattened, abdomen and anal segment subcylindrical. Puparium split dorsolaterally to first abdominal segment to facilitate emergence of the adult (Fig. 1). Head skeleton (Fig. 2): length 0.05mm, lightly sclerotised and ventral cornu longer and wider than dorsal cornu. Cibarial ridges (= ventral pharyngeal ridges) apparently absent. Intermediate sclerite expanded anteriorly to form heavily sclerotised epicondyles articulating with the mandibles. Posteriorly, intermediate sclerite separate from the basal sclerite. Mandibles separate, subrectangular at base with an apicoventral curved projection and two, small, accessory teeth. Mandible heavily sclerotised. Dental sclerite absent. Basal sclerite without parastomal bars. Dorsal bridge present.

Anterior spiracles at anterior apex of the puparium (Fig. 1). Anterior spiracles length 0.3mm, subcylindrical base about 0.15mm long and lightly sclerotised. Upper half with a 'brush' of tubular openings of varying lengths emerging from the apex of a shared base (Fig. 3). Integument matt and without vestiture. However, dorsum of abdominal segments 1-7 with spicules on posterior halves of each segment, spicules uniform in size. Ventrally spicule bands forming numerous inclined rows occupying about half segment width with anterior row of spicules larger than the rest. Anal segment with 4 pairs of triangular, fleshy projections surrounding the paired posterior respiratory organs (Fig. 4). Anus opening parallel with longitudinal axis of the body and surrounded by a pair of semi-circular shaped lobes. Posterior breathing organs borne on subcylindrical projections about 0.1mm long, lightly sclerotised and diverging. Each spiracular plate with 3 pairs of oval shaped openings (Fig. 5).

Identification of adult

This species has the head dull yellowish with thin grey dusting and the thorax mainly brownish yellow with grey dusting and dull brown markings: a median brown stripe dorsally including the inner acrostichal rows and extended more broadly onto the disc of the scutellum, irregular brown markings external to the dorsocentral bristles and a narrow brown stripe at the top of the pleura. The abdomen is mostly shining dark brown with narrow yellow apical margins linked by a narrow yellow median stripe on tergites 2-5. The antennae, palpi and legs are yellow. The wing (length 2.2-2.5mm in male, 2.3-2.6mm in female) (Fig. 6) is clear apart from a small brown spot at the tip of vein R_{4+5} in both sexes.

The arista has 5 dorsal and 2 ventral branches in addition to the forked tip. The palpus has two long black bristles apically. The dorsocentrals are 0+2, the acrostichals are in 4 rows before the suture but mainly biserial between the dorsocentrals, with only 1-2 irregular bristles between them and the dorsocentrals behind the suture. The apical scutellars are about half the length of the basals. There is a strong upper postpronotal bristle and a short weak lower bristle about half the length of the upper.



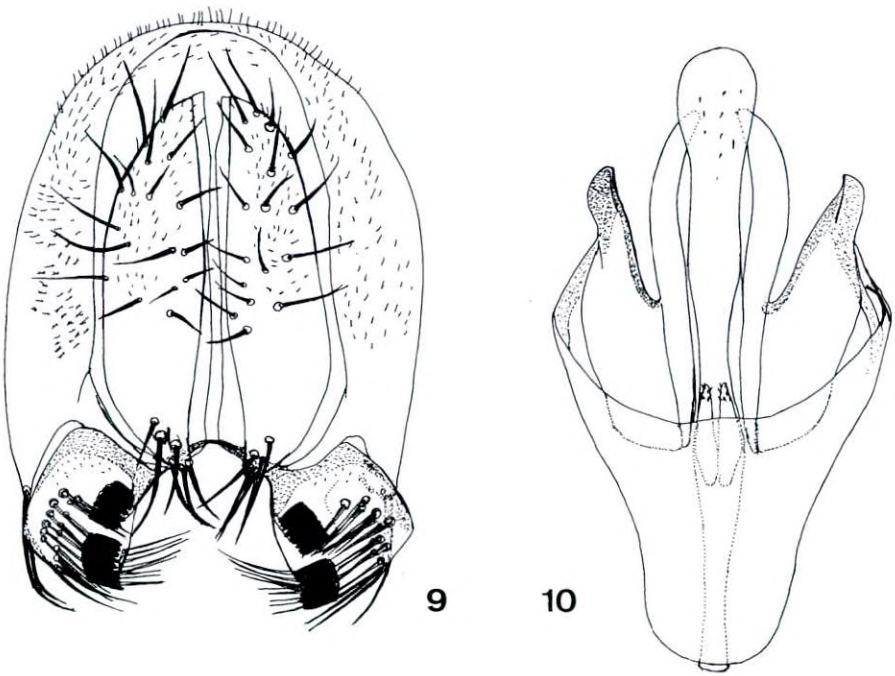
Figs 6-8. *Scaptomyza adusta* (Loew): 6, male wing; 7, male hind trochanter, lateral view; 8, female, lateral view of oviscapt.

The species group including *Scaptomyza adusta* was placed by Hackman (1959) in the subgenus *Mesoscaptomyza* Hackman, 1959 but transferred to *Parascaptomyza* Duda, 1928 by Wheeler and Takada (1966). This group differs from other species of *Parascaptomyza*, including the common British species *S.* (*P.*) *pallida* (Zetterstedt, 1847), in having four rows of acrostichal bristles developed at least presuturally and two postpronotal (humeral) bristles. It is distinguished from *Scaptomyza* sensu stricto by the lower postpronotal bristle being weak and not more than half the length of the upper bristle while these bristles are subequal in *Scaptomyza* sensu stricto. As the lower postpronotal bristle is about half as long as the upper bristle in *S. adusta* it could run to subgenus *Hemiscaptomyza* in the keys by Hackman (1959) and Wheeler and Takada (1966), suggesting that the separation of subgenera using this character is rather arbitrary and requires revision. *Hemiscaptomyza* includes two European species *S. unipunctum* and *S. trochanterata* Collin, 1953. As indicated by comparison with *S. unipunctum* the strong bristle on the hind trochanter found in *Hemiscaptomyza* is also evidently stronger in *S. adusta* (Fig. 7) than in *Scaptomyza* sensu stricto.

The small spot at the tip of vein R_{4+5} in *S. adusta* is also characteristic of several species of *Hemiscaptomyza*. In the only British species of that subgenus, *S. trochanterata*, the wing is unmarked in both sexes although B. Pitkin and P. Beuk (in preparation) state that the wing is almost imperceptibly clouded at the tip of this vein in *S. trochanterata*. It was described from Aviemore, Inverness-shire (Collin 1953) and an earlier record from Nairn was cited by Basden (1954), but its British distribution is not entirely boreal as there are records

from several counties in Wales including numerous localities in South Wales (Pitkin and Beuk in preparation).

Apart from the presence of the wing spot in both sexes *S. adusta* also differs from *S. unipunctum* in the structure of the male genitalia (Figs 9-10), which are figured for both sexes of *S. unipunctum* by Bächli *et al.* (*op. cit.*). The male cercus in *S. adusta* has an entire posterior margin as in *S. unipunctum* (notched medially in *S. trochanterata*) but is more tapered distally with a group of strong bristles apically. The surstylus in *S. adusta* (Fig. 9) has the prensisetae (series of short tooth-like spines) in two similar rows separated by a distinct gap, while they form a curved but continuous row in *S. unipunctum*. The aedeagal structure (Fig. 10) is also quite distinct, with the apical part of the aedeagus in *S. adusta* appearing bulbous in ventral view, while it is narrow in this view in *S. unipunctum*. The female oviscapt (Fig. 8) is similar to *S. unipunctum* with the denticles more strongly developed towards the tip.



Figs 9-10. ***Scaptomyza adusta*** **(Loew), male genitalia: 9, dorsal view of epandrium, cerci and surstyli; 10, ventral view of hypandrium and aedeagus.**

Material examined

ENGLAND: Durham, Durham University Botanic Garden, 7.vii.2005 18♂8♀ on *Costus arabicus* in hothouse (leg. P.J. Chandler, J.W. Ismay and B. Schulten (now Ismay)); 23.vii.2005 4♀ emerged ex inflorescence of *Costus arabicus*; viii.2005 7♂7♀ emerged (with many others) ex inflorescence of *Costus arabicus* + many puparia (four studied by GER, deposited at NMS); adults deposited in authors' collections and at National Museums of Scotland and Zoological Museum, University of Zürich, Switzerland.

Acknowledgements

We are grateful to Ken and Rita Merrifield for informing us of their observations of this species and to Steve Ansdell, Horticultural Manager at the Durham University Botanic Garden for permitting us to record Diptera there. We are also indebted to Gerhard Bächli for kindly checking the identity of some adult specimens.

References

Bächli, G. 2004. Diptera, Drosophilidae. pp 288-289. **In** Cerretti, P. *et al.* (Eds) Invertebrati di una foresta della Pianura Padana, Bosco della Fontana. Secondo contributo. Conservazione Habitat Invertebrati **3,** 304 pp. Cierre Grafica Editore, Verona.

Bächli, G. 2005. Fauna Europaea: Drosophilidae. **In** Pape, T. (Ed.) Fauna Europaea: Diptera, Brachycera. *Fauna Europaea version 1.3*, http://www.faunaeur.org [consulted May 2008].

Bächli, G., Vilela, C.R., Escher, S.A. and Saura, A. 2004. The Drosophilidae (Diptera) of Fennoscandia and Denmark. *Fauna Entomologica Scandinavica* 39, 1-362.

Basden, E.B. 1954. The distribution and biology of Drosophilidae (Diptera) in Scotland, including a new species of "*Drosophila*". *Transactions of the Royal Society of Edinburgh* **62,** 603-654, 2 plates.

Collin, J.E. 1953. On the British species of *Scaptomyza* Hardy and *Parascaptomyza* Duda (Diptera, Drosophilidae). *Entomologist* **86,** 148-151.

Ferrar, P. 1987. A Guide to the Breeding Habits and Immature Stages of Diptera Cyclorrhapha (Part 1: text). *Entomonograph* **8,** 478 pp. E.J. Brill/Scandinavian Science Press; Leiden and Copenhagen.

Hackman, W. 1959. On the genus *Scaptomyza* Hardy (Dipt., Drosophilidae) with descriptions of new species from various parts of the world. *Acta Zoologica Fennica* **97,** 1-73.

Kimura, M.T, Toda, M.J., Beppu, K. and Watabe, H.-A. 1977. Breeding sites of drosophilid flies in and near Sapporo, northern Japan, with supplementary notes on adult feeding habits. *Kontyû* **45,** 571-582.

Malloch, J.R. 1915. Some additional records of Chironomidae for Illinois and notes on other Illinois Diptera. *Bulletin of the Illinois State Laboratory of Natural History* **11**(4), 305-363, 5 plates.

Nicoli Aldini, R. 2005. *Scaptomyza* (*Parascaptomyza*) *adusta* (Loew, 1862). *Bollettino della Società entomologica Italiana* **137,** 63-64.

Nicoli Aldini, R. and Baviera, C. 2002. Note sui Ditteri che sequentano le culture di spinacio, con segnolazione in Italia dei Drosofilidi nearctico *Scaptomyza adusta* (Loew) (abstract). *Atti XIX Congresso Nazionali Italiano di Entomologia, Catania. Riassiunto dei contributi scientifici*: 164.

Nicoli Aldini, R. and Baviera, C. 2004. Note sui Ditteri che sequentano le culture di spinacio, con segnolazione in Italia dei Drosofilidi nearctico *Scaptomyza adusta* (Loew). *Atti XIX Congresso Nazionali Italiano di Entomologia* **1,** 759-763.

Patterson, J.T. 1943. The Drosophilidae of the Southwest. *University of Texas Publications* **4313,** 7-216.

Sturtevant, A.H. 1921. The North American species of *Drosophila. Publications of the Carnegie Institution of Washington* **301,** 1-150, 3 plates.

Wheeler, M.A. and Takada, H. 1966. The Nearctic and Neotropical species of *Scaptomyza* Hardy (Diptera: Drosophilidae). *University of Texas Publications* **6615,** 37-78.

A second record for *Tipula (Emodotipula) gomina* Dufour 2003 (Diptera, Tipulidae) - On 30 May 2007, together with Phil Withers, I visited the Cirque de Même, which lies about 80km ESE of Lyon, in south-east France, and about 4km SSE of Saint-Pierre-d'Entremont (Isère) (the GPS reading for the gorge is 31T 0726 5030, and reference LG 878 2050 by the French Lambert Grid). There a wooded stream-filled gorge climbs upwards towards the wall of the glacial cirque, down which a waterfall cascades, feeding the stream. The stream can be torrential, with moss-covered boulders, and there are seepages from the steep sides of the limestone gorge.

There I caught a male tipulid, which was identified by Pjotr Oosterbroek as the second specimen found of *Tipula (Emodotipula) gomina* Dufour, 2003 (Dufour, C. 2003. Descriptions of four new species of Tipulidae from the Alpes-Maritimes in Southern France. *Bulletin de la Société Neuchâteloise des Sciences Naturelles* **126**(1), 69-80). The only previous specimen had been caught by Christophe Dufour near Entraunes in the Alpes-maritimes, which lies about 150km to the SSW of the site described here. Associated species which I recorded in the Cirque de Même there were: *Liponeura* species (Blephariceridae), *Pedicia straminea* (Meigen) and *Dicranota subtilis* Loew (Pediciidae) and the limoniids *Antocha alpigena* (Mik), *Lipsothrix errans* (Walker), *L. remota* (Walker), *Dactylolabis transversa* (Meigen), *Elliptera omissa* Egger, *Dicranomyia distendens* Lundström and *D. caledonica* Edwards.

Tipula gomina is distinguished by the characteristic bristles along the edge of tergite 9, which reminded Dufour of hair that had been combed up using hair gel, hence 'gomina', an old French proprietary name for this substance. The Palaearctic-Oriental subgenus *Emodotipula* Alexander is represented in the West Palaearctic by four species only. One of these, *T.* (*E.*) *obscuriventris* Strobl, is widely distributed but the other three species have rather limited distributions: *T.* (*E.*) *gomina* Dufour is found in SE France, *T.* (*E.*) *leo* Dufour in the Spanish Sierra Nevada and Moroccan Rif mountains and *T.* (*E.*) *saginata* Bergroth in the western Alps - **JOHN KRAMER,** 31 Ashtree Road, Oadby, Leicester LE2 5TE

Dipterists Digest 2008 **15**, 13-15

Doros destillatorius Mik (Diptera, Syrphidae) in central France – a northern extension to its French distribution

DARWYN SUMNER and PHIL WITHERS*

122, Link Road, Anstey, Leicestershire, LE7 7BX darwyn.sumner@ntlworld.com
Montée du Cimetière, Sainte Euphémie, 01600, France. Phil.withers@wanadoo.fr

Summary

A record of *Doros destillatorius* Mik, 1885 from the French département of Ain is reported, extending its distribution northwards. Suggestions are made concerning its association with ants. Behavioural observations are suggestive of oviposition on moss-covered oaks.

Introduction

The genus *Doros* is represented in Europe by two species, *D. profuges* (Harris) and *D. destillatorius* Mik. Both are striking wasp mimics, but are rarely encountered, having cryptic behaviour and probably a short flight season.

During the 2006 Dipterists Forum field meeting in France, 13 June was spent collecting in the Forêt Domainiale de la Réna, near Certines, Ain (N46 07 47.9 E5 13 53.5; Lambert Grid: 824.2129). This old forest is one of the very few in the département of Ain, and has been known for its important invertebrate fauna for many decades (it is, for example, the only locality in Rhône-Alpes for the carabid *Abax carinatus* (Duftschmid)). A female *Doros* was caught at this site by DS and later reference by the authors to the key provided by Speight (1988) revealed this surprisingly as *D. destillatorius* Mik.

The habitat comprised an open, partially-felled area of woodland scattered with several oaks of approximately 0.5m diameter and numerous piles of logs were stacked nearby. Many of the oaks had dense mats of moss at their base and this moss continued up the trunks to some extent. On many of these oaks it had earlier been noted that ants were using this moss to gain access to the tree canopy.

Biological observations

The fly was taken on the moss-covered bark of an upright oak, which had a major ant passage running vertically. Very little time was available for observing the behaviour of the *Doros*, experience with the habits in England of *Doros profuges* (Harris), indicating that speed is of the essence in ensuring its capture. It was certain, however, that the fly made straight for the moss on the oak trunk at about head height, immediately "bounced off", touched the moss once again a couple of centimetres higher and was captured as it flew backwards once again.

This was coincidentally the same tree on which PW had earlier taken *Clitellaria ephippium* (Fabricius) (Stratiomyidae), another known ant-associate, and was the only tree in the vicinity with resident ants. There has long been a suspicion that *Doros* larvae live in association with ants: it is possible that the female lays eggs in or near the ant trackway, and these are then transported into the nest where they develop. The fly's behaviour suggested the

possibility at the time that it could have been laying eggs in this moss and this conclusion may be supported by Speight's (1988) finding of a puparium in moss at the base of an oak

Doros species are frustrating syrphids to detect – despite further visits by PW during the following week, at different times of the day, the many hours spent patrolling the tree (and others like it) revealed no further specimens. The Forêt de la Réna had been regularly prospected by PW over more than 10 years and *Doros* had never been seen before. That said, the locality is particularly rich in sporadically encountered old-forest syrphids, with *Brachypalpoides lentus* (Meigen), *Brachypalpus valgus* (Panzer), *Caliprobola speciosa* (Rossi), *Chalcosyrphus valgus* (Gmelin), *Sphiximorpha subsessilis* (Illiger) and *Temnostoma vespiforme* (Linnaeus) all having been seen, mostly as singletons. Five species of *Brachyopa* and two species of *Microdon* are more frequently recorded from this locality.

On a more recent visit by PW to investigate the possible ant association, it was found that the area of forest including the tree on which the *Doros* was taken had been clear felled since the previous visit, limiting the potential for further observations.

Distribution

Doros destillatorius was originally considered as having a Mediterranean distribution, with records from the Pyrenées-Orientales and Var in France (Speight 1993, Sarthou and Speight 1997). The map provided here (UTM grid) was constructed based upon distribution information provided by Sarthou and Monteil (2006) on their "Syrphidae of France Interactive Data" website (SYRFID database), which gave additional recent records from Drôme and Haute-Garonne. This latest finding extends the distribution in France more northerly as figured below to the Ain Département in the Rhône-Alpes Région, suggesting that it may be more widespread, and should also be looked for in old forest areas in central France. *Doros profuges* records are included for comparison (there are no overlaps).

Acknowledgements

We are grateful to John Kramer, Mick Parker and Joyce Sumner for entertainment, support and sustenance in France

References

Sarthou, J.P. and Monteil, C. 2006. SYRFID vol.3: Syrphidae of Interactive France Data [URL On-line: http://syrfid.ensat.fr/].

Sarthou, J.P. and Speight, M.C.D. 1997. Faunistic Inventory of Dipterous Syrphidae and Microdontidae of the south-west of France. *Bull. Ploughshare ent. France* **102**(5), 457-480.

Speight, M.C.D. 1988. *Doros destillatorius*, espèce nouvelle pour la France, avec désignation des types des deux espèces européennes du genre *Doros*, description de leur pupes et clés de détermination des adultes et des pupes. *Bulletin de la Société entomologique de France* **92**(5-6), 193-200.

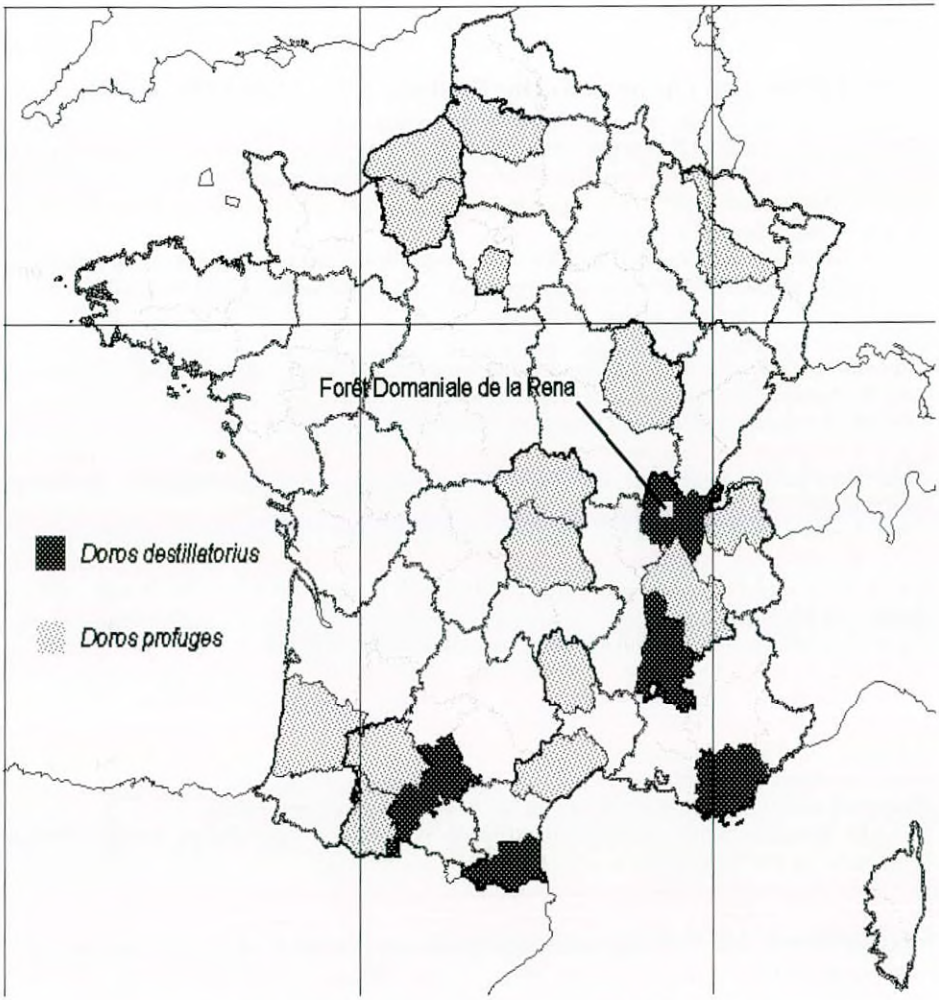


Fig. 1. Distribution of *Doros* species in France.

Speight, M.C.D. 1993. Révision des syrphes de la faune de France : I. Liste alphabétique des espèces de la sous-famille des Syrphinae (Dipt., Syrph.). *Bulletin de la Société entomologique de France* **98**(1). 35-46.

Corrections and changes to the Diptera Checklist (19) – 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.

Changes are listed under families; names new to the British Isles list are in bold type. The notes below refer to deletion of 2 species, loss of 5 due to synonymy and addition of 26 species, resulting in a new total of **7002** species.

Limoniidae. The following species was added by A. STUBBS (2001. Cranefly Recording Scheme. *Bulletin of the Dipterists Forum* **51,** 5):
Ormosia (*Ormosia*) ***ruficauda*** (Zetterstedt, 1838 – *Erioptera*)

The following synonymy was proposed by J. STARÝ (2006. Nomenclatural changes in West Palaearctic Limoniidae and Pediciidae (Diptera). *Acta Universitatis Carolinae, Biologica* **49,** 175-186):
Erioptera ***longicauda*** Loew, 1871 = *E. flavissima* Starý, 1972

The following synonymy was proposed by J. STARÝ (2007. Nomenclatural changes in West Palaearctic Limoniidae and Pediciidae (Diptera), II. *Casopis Slezského Musea v Opave, Opava* (A) **56,** 23-36):
Limonia nigropunctata (Schummel, 1829) = *L. masoni* Edwards, 1921

According to the on-line catalogue by P. OOSTERBROEK (2006 [last updated March 2008]. *Catalogue of the Craneflies of the World (Diptera, Tipuloidea: Pediciidae, Limoniidae, Cylindrotomidae, Tipulidae)* nlbif.eti.uva.nl/ccw) the following synonymies were proposed following J. Starý *pers. comm.*:
Tasiocera ***halesus*** (Schmid, 1949) = *T. collini* Freeman, 1951
Tasiocera fuscescens (Lackschewitz, 1940) = *T. muscula* (Schmid, 1949)

In the same work the following species is correctly recorded as British although apparently not yet recorded as such in the British literature:
Paradelphomyia (*Oxyrhiza*) ***czizekiana*** Starý, 1971

Mycetophilidae. The following genus and species were added by P.J. CHANDLER (2008. *Fungus Gnats Recording Scheme Newsletter* Spring 2008. pp 1-2. (circulated with *Bulletin of the Dipterists Forum* No. **65,** Spring 2008)) [to be more formally added in the *British Journal of Entomology and Natural History*]:
GREENOMYIA Brunetti, 1912
Greenomyia ***mongolica*** Laštovka & Matile, 1974

Simuliidae. The following species was added by R.J. POST (2008. The blackflies of the Cuckmere valley (Diptera: Simuliidae). *Entomologist's Gazette* **59,** 117-123):
Simulium (*Eusimulium*) ***petricolum*** Rivosecchi, 1963

Ceratopogonidae. The following species are added in the present issue:
Brachypogon (*Isohelea*) ***bialoviesicus*** Krzywiński in Szadziewski, Kaczorowska & Krzywiński, 1994
Brachypogon (*Isohelea*) ***carpaticus*** Szadziewski in Szadziewski, Kaczorowska & Krzywiński, 1994
Brachypogon (*Isohelea*) ***hyperboreus*** Clastrier, 1961
Brachypogon (*Isohelea*) ***norvegicus*** Szadziewski & Hagan, 2000
Bezzia (*Bezzia*) ***kazlauskasi*** Remm, 1966 +
Bezzia (*Bezzia*) ***signata*** (Meigen, 1804 - *Ceratopogon*)
Dasyhelea (*Dicryptoscena*) ***lucida*** Remm in Remm & Zhogolev, 1968
Dasyhelea (*Dicryptoscena*) ***stellata*** Remm in Remm & Zhogolev, 1968
Dasyhelea (*Prokempia*) ***luteiventris*** Goetghebuer, 1934
Dasyhelea (*Pseudoculicoides*) ***neobifurcata*** Wirth, 1976
Dasyhelea (*Pseudoculicoides*) ***turficola*** Wirth, 1976 + = *D. flavoscutellata* of checklist
Forcipomyia (*Forcipomyia*) ***nigrans*** Remm, 1962
Forcipomyia (*Synthiridomyia*) ***knockensis*** Goetghebuer, 1938

The deletion of *Dasyhelea flavoscutellata* results and *Bezzia pygmaea* is noted as requiring confirmation, but remains in the list for the present.

The following nomenclatural changes are also cited in the present issue:
Bezzia (*Homobezzia*) ***solstitialis*** (Winnertz, 1852 - *Ceratopogon*) = *B. circumdata* (Staeger, 1839)
Palpomyia ***tinctipennis*** Kieffer, 1919 = *P. semifumosa* Goetghebuer, 1922

Dolichopodidae. The following species are added in the present issue, also resulting in the deletion of *Xanthochlorus luridus* Negrobov, 1978 from the British list:
Achalcus ***nigropunctatus*** Pollet and Brunhes, 1997
Xanthochlorus ***galbanus*** Chandler & Negrobov, 2008
Xanthochlorus ***silaceus*** Chandler & Negrobov, 2008

Phoridae. The following species was added to the British Isles list from Ireland by R.H.L. DISNEY (2008. *Megaselia longistyla* Brenner, 2004 (Diptera: Phoridae) new to the British Isles. *Entomologist's Gazette* **59,** 129-130):
Megaselia ***longistyla*** Brenner, 2004 ++

Syrphidae. The following introduced species is added in the present issue:
Cheilosia ***caerulescens*** (Meigen, 1822)

Pipunculidae. The following species is added in the present issue:
Dorylomorpha ***occidens*** (Hardy, 1939 – *Pipunculus*)

Conopidae. The following synonymy was proposed by J.-H. STUKE and D.K. CLEMENTS (2005. The interpretation of some Conopidae (Diptera) described by Robineau-Desvoidy. *Zootaxa* **886,** 1-12):

Myopa ***pellucida*** Robineau-Desvoidy, 1830 = *M. extricata* Collin, 1960

The following changes in *Myopa* result from J.-H. STUKE and D.K. CLEMENTS (2008. Revision of the *Myopa testacea* Species Group in the Palaearctic Region (Diptera: Conopidae). *Zootaxa* **1713,** 1-26):

Myopa ***hirsuta*** Stuke & Clements, 2008 = *M. strandi* of authors including Collin, 1960

Myopa vicaria Walker, 1849 = *M. strandi* Duda, 1940

The following synonymy was proposed by M. MEI and J.-H. STUKE (2008. Remarks on *Zodion nigritarsis* (Strobl, 1902) and other European species of *Zodion* Latreille, 1896, with a revised key (Diptera, Conopidae). *Tijdschrift voor Entomologie* **151,** 3-10):

Zodion cinereum (Fabricius, 1794) = *Z. notatum* (Meigen, 1804)

Opomyzidae. The following synonymy was proposed by J.W. A. VAN ZUIJLEN and J. ROHÁČEK (2006. Notes on the Opomyzidae (Diptera) of the Czech Republic and Slovakia, with two new synonyms in *Geomyza* Fallén. *Casopis Slezského Musea v Opave, Opava* (A) **55,** 125-130):

Geomyza apicalis (Meigen, 1830) = *G. hendeli* Czerny, 1928

Canacidae (including Tethinidae). The following synonymy was proposed by L. MUNARI (2006. New synonymies and lectotype designations in Western Palaearctic Tethinidae, with some remarks on the intraspecific variability of the surstylus of *Tethina strobliana* (Mercier, 1923) (Diptera: Brachycera: Acalyptrata). *Bollettino del Museo Civico di Storia Naturale di Venezia* **57,** 101-115):

Tethina strobliana (Mercier, 1923) = *T. simplex* (Collin, 1966)

It has also been proposed by D.K. MCALPINE (2007. The surge flies (Diptera: Canacidae; Zaleinae) of Australasia and notes on tethinid-canacid morphology and relationships. *Records of the Australian Museum* **59,** 27-64) that Tethinidae should be included in Canacidae. This has been accepted in recent papers by M. Buck and L. Munari. Pelomyiinae and Tethininae are subfamilies of Canacidae, the two British genera hitherto included in Canacidae now representing subfamily Canacinae (Lorenzo Munari *pers. comm.*).

Chloropidae. The following nomenclatural changes result from E.P. NARTSHUK (2006. A revision of Meigen's Chloropidae collection of the Museum national d'Histoire naturelle, Paris. *Zoosystematica rossica* **15,** 173-184):

Oscinella ***vindicata*** (Meigen, 1830) = *O. hortensis* Collin, 1940

Meromyza femorata Macquart, 1835 = *M. laeta* Meigen, 1838

Meromyza ***meigeni*** Nartshuk, 2006 = *M. laeta* of checklist

Heleomyzidae. The following nomenclatural change results from P. WOŻNICA (2006. *Gymnomus caucasicus* a new species of heleomyzid flies from Caucasus Mountains (Diptera: Heleomyzidae). *Genus* (Wroclaw) **17**(3), 399-408):

Gymnomus amplicornis (Czerny, 1924) (transferred from *Scoliocentra*)

D.K. MCALPINE (2007. Review of Borboroidini or wombat flies (Diptera, Heteromyzidae) with reconsideration of the status of families Heleomyzidae and

Sphaeroceridae and descriptions of femoral gland-baskets. *Records of the Australian Museum* **59,** 143-219) has proposed that Heleomyzidae and Sphaeroceridae should be included in one family, for which the name Heteromyzidae is used. This is cited here only for information pending further views being published on the matter.

Drosophilidae. The following species is added in the present issue:
Hirtodrosophila ***trivittata*** (Strobl, 1893 - *Drosophila*)

The following introduced species is added in the present issue:
Scaptomyza ***adusta*** (Loew, 1862 - *Drosophila*)

Muscidae. The following species, listed as an excluded species in the checklist, is restored to the British list in the present issue:
Muscina ***pascuorum*** (Meigen, 1826)

Tachinidae. The following species is added in the present issue:
Ceranthia ***tenuipalpis*** (Villeneuve, 1921)

Changes to the Irish Diptera List (9) – Editor

This section appears as necessary to keep up to date the initial update of the Irish list in Vol. **10,** 135-146. Species are listed under families, but with references listed separately. The additions reported here bring the confirmed Irish list, amended following some previous errors in calculation, to **3291** species.

Ceratopogonidae (all added by Chandler *et al.* in the present issue)
Ceratopogon lacteipennis Zetterstedt, 1838
Ceratopogon grandiforceps (Kieffer, 1913)
Serromyia atra (Meigen, 1818)
Culicoides (*Beltranmyia*) *salinarius* Kieffer, 1914
Bezzia (*Bezzia*) ***kazlauskasi*** Remm, 1966
Bezzia (*Homobezzia*) ***annulipes*** (Meigen, 1830)
Bezzia (*Homobezzia*) ***leucogaster*** (Zetterstedt, 1850)
Bezzia (*Homobezzia*) ***solstitialis*** (Winnertz, 1852)
Palpomyia lineata (Meigen, 1804)
Palpomyia luteifemorata (Edwards, 1926)
Palpomyia praeusta (Loew, 1869)
Palpomyia serripes (Meigen, 1818)
Palpomyia tinctipennis Kieffer, 1919
Dasyhelea (*Pseudoculicoides*) ***turficola*** Wirth, 1976 = *D. flavoscutellata* of checklist, which is deleted from the Irish list

Phoridae
Megaselia longistyla Brenner, 2004 (Disney 2008; new to the British Isles, see above)

Pipunculidae
Eudorylas longifrons Coe, 1966 (added by Gibbs and Chandler in the present issue)

Dipterists Digest 2008 **15**, 20-22

Muscina pascuorum (Meigen, 1826) (Diptera, Muscidae) in Britain

P. SKIDMORE and A.C. PONT*

27 Yew Tree Road, Elkesley, near Retford, Notts., DN22 8AY; email: pskid@btinternet.com
*Oxford University Museum of Natural History, Parks Road, Oxford OX1 3PW;
email: pont.muscidae@btinternet.com

Summary

Muscina pascuorum (Meigen, 1826) is reinstated on the British list on the basis of a male from a pitfall trap survey at Minsmere in Suffolk, collected in 2005.

Introduction

Muscina pascuorum (Meigen, 1826) was recorded from Britain by Audcent (1933) and on the strength of this was included by Kloet and Hincks (1945). However, since no authentic British specimens could be located, the species was deleted from the British list by d'Assis-Fonseca (1968) and this treatment was followed by Chandler (1998), where it was stated that the species had been included in error in previous works.

During 2005, a pitfall-trapping survey of the reed-beds at Minsmere Nature Reserve in Suffolk was undertaken by Dr. M.G. Telfer for the Royal Society for the Protection of Birds (RSPB). The catch was sent by him to Dr J.W. Ismay for identification and the muscoid flies were then passed to PS who found a male specimen of *Muscina pascuorum* in a sample labelled "pioneer 3, 14/15.vi- 5vii. 2005".

Recognition

As noted by Hennig (1955-64), *M. pascuorum* most closely resembles *M. prolapsa* (Harris) (as *M. pabulorum* (Fallén)) in the Palaearctic fauna, and it would run down to this species in the key provided by d'Assis-Fonseca (*op. cit.*) because of its wholly black legs and orange palpi. To the observations by Hennig (*op. cit.*), we can add that *M. pascuorum* further resembles *M. prolapsa* and *M. stabulans* (Fallén) in having the apical section of vein M_{1+2} strongly curved forward towards vein R_{4+5} (see Gregor *et al.* 2002: Fig. 9j), whereas in *M. levida* (Harris) vein M_{1+2} is only weakly curved forward (see Gregor *et al.* 2002: Fig. 7b). Moreover, it differs in the male sex from the other Palaearctic species of *Muscina* Robineau-Desvoidy by lacking a tuft of setulae on the hind margin of the posterior spiracle. More superficially, it is more reminiscent of *M. levida* in the darker scutal colour and very obscure scutal vittae; in *M. prolapsa* the scutal vittae are much more conspicuous. The most striking difference, however, is in the large size of the lower (thoracic) calypter, the inner margin of which runs alongside the scutellar margin before diverging from the scutellum; in *M. prolapsa* and other *Muscina* species the inner margin diverges immediately from the base of the scutellum so that the calypter is tongue-shaped (see Gregor *et al.* 2002: Figs 10h, 10i).

The key in d'Assis-Fonseca (*op.cit.*) requires amendment as follows:

4(3) Palpi orange.

5(6) Lower (thoracic) calypter very broad, its inner margin running along the scutellar margin for a short distance before diverging from the scutellum. Abdominal tergites 1+2 and 3 reddish at sides. Scutal vittae obscure and largely effaced ..... *M. pascuorum* (Meigen)

6(5) Lower (thoracic) calypter much narrower, tongue-shaped, strongly divergent from scutellar base. Abdominal tergites entirely dark in ground colour. Scutal vittae very conspicuous ..... *M. prolapsa* (Harris)

Biology and distribution

Like other *Muscina* species, *M. pascuorum* develops in a wide range of decaying organic materials where the larvae are trimorphic facultative carnivores. Unlike other species, however, there is no evidence of any ecological preference in this regard (Skidmore 1985).

Although recorded from southern France to southern Sweden and Finland, eastwards to northwest China (see Pont 2005), Hennig (*op.cit.*) notes that *M. pascuorum* is the scarcest of the five European *Muscina* species, except in more mountainous parts of Central Europe. The occurrence of *M. pascuorum* in Suffolk may be the result of casual immigration from the near-continent as *Muscina* species are powerful fliers. There appears to be no reason why the species should not become more widespread in Britain.

Another potential coloniser

It may be worth noting that a sixth member of the Reinwardtiini has recently started to colonise the western Palaearctic, namely *Synthesiomyia nudiseta* (Wulp). This pantropical species is becoming widespread in the Mediterranean region (Pont 2005) and in response to global warming it can be expected to extend its range northwards in Europe. It differs from *Muscina* in having a bare arista and setulose prosternum. Superficially it most closely resembles *M. prolapsa* in the conspicuous scutal vittae and in its wing venation, but differs *(inter alia)* by the conspicuous orange tip to 5th abdominal segment, a feature clearly seen "in the field". The biology, and larval and puparial morphology, were discussed by Skidmore (1985).

Acknowledgements

Thanks are offered to Dr J.W. Ismay for involving PS in this survey, and to Dr M.G. Telfer and, through him, the RSPB for commissioning this survey.

References

Assis-Fonseca, E.C.M. d' 1968. Muscidae. *Handbooks for the Identification of British Insects* **10(4b)**, 119 pp. Royal Entomological Society of London.

Audcent, H. 1933. Bristol insect fauna. Diptera (Part V). *Proceedings of the Bristol Naturalists' Society* (4) **7,** 358-370.
Chandler, P.J. 1998. (Ed.). Checklists of Insects of the British Isles (New Series). Part 1: Diptera (Incorporating a List of Irish Diptera). *Handbooks for the Identification of British Insects* **12**(1), i-xix, 1-234. Royal Entomological Society, London.
Gregor, F., Rozkošný, R., Barták, M. and Vaňhara, J. 2002. The Muscidae (Diptera) of Central Europe. *Folia Facultatis Scientiarum Naturalium Universitatis Masarykianae Brunensis, Biologia* **107,** 280 pp.
Hennig, W. 1955-1964. Muscidae. **In** Lindner, E. (Ed.) *Die Fliegen der paläarktischen Region* **63b,** 1110 pp. Stuttgart, Schweizerbart.
Kloet, G.S. and Hincks, W.D. 1945. *A checklist of British Insects*. Arbroath, T. Buncle.
Pont, A.C. 2005. Fauna Europaea: Muscidae. **In** Pape, T. (Ed.), Fauna Europaea: Diptera Brachycera. *Fauna Europaea* version 1.3 http://www.faunaeur.org (6 April 2008).
Skidmore, P. 1985. The Biology of the Muscidae of the World. *Series Entomologica* **29,** xiv + 550 pp.

***Angiometopa falleni* Pape, 1986 (Diptera, Sarcophagidae) rediscovered in Britain -** Amongst the flies collected from a Malaise trap operated by David Baldock on Hankley Common (SU8739, V.C. 17 Surrey) I found two fairly large sarcophagids that keyed to *Angiometopa falleni* Pape using the keys by T. Pape (1987. The Sarcophagidae (Diptera) of Fennoscandia and Denmark. *Fauna Entomologica Scandinavica* **19,** 1-203). They were from a sample dated 14.vii-7.viii.2001 and comprised a male and a female. They were in poor condition, having lost many bristles and had dried out completely before any manipulation was possible. This, together with the species' apparent scarcity in Britain, cast doubt on my identification and the specimens were put to one side for subsequent confirmation.

On 5 June 2007, while doing survey work on Westcott Downs (TQ1349, V.C. 17 Surrey) I caught a further specimen. This was in much better condition and both the key characters and the male genitalia matched the description by Pape. All three specimens have subsequently been confirmed as belonging to this species by Nigel Wyatt at the Natural History Museum, London.

As far as I can ascertain this species was only known in Britain from a single site, Wimbledon Common (also in Surrey), where it was found on several occasions between 1952 and 1955; there are seven males from this site in the Natural History Museum collection, all collected by D.J and J.A. Clark. According to T. Pape (2007. Fauna Europaea: Sarcophagidae. **In** Pape, T. (Ed.) Fauna Europaea: Diptera, Brachycera. *Fauna Europaea version 1.3*, http://www.faunaeur.org [consulted July 2008]) it occurs in most European countries, and Pape (*loc. cit.*) describes it as not rare in Denmark and southern Sweden.

I thank Nigel Wyatt for confirming the specimens, and Natural England for funding the survey work at Westcott Downs as part of the ISIS project - **GRAHAM A. COLLINS,** 15 Hurst Way, South Croydon, Surrey CR2 7AP

Dipterists Digest 2008 **15**, 23-26

Cheilosia caerulescens (Meigen, 1822) (Diptera, Syrphidae) new to Britain

GRAHAM A. COLLINS and ANDREW J. HALSTEAD*
15 Hurst Way, South Croydon, Surrey CR2 7AP.
*RHS Garden, Wisley, Woking, Surrey GU23 6QB.

Summary
Cheilosia caerulescens (Meigen, 1822) is reported from Britain. Characters for separating it from similar species are given and its distribution and life-history discussed.

Introduction

Although the summer of 2006 was remarkable for its long spells of fine and very hot weather the conditions in late spring were very poor. This dampened GAC's enthusiasm for making field trips into the wider countryside and instead he took the opportunity of occasional spells of warmth and sunshine to record from his garden in suburban South Croydon (TQ3363, V.C. 17 Surrey).

On 24 May 2006 GAC captured a female hoverfly, which was quite striking but which he was unable to identify using Stubbs and Falk (2002). It keyed easily to the *Cheilosia pagana* (Meigen) - Group, but was clearly not one of the species included in the *C. pagana* Group in that work, so was put away for later reassessment. During the winter of 2006 he looked again at the specimen and came to the same conclusion but using van Veen (2004) decided that it was clearly *Cheilosia caerulescens*, a species not known from Britain. The specimen was shown to Peter Chandler, who agreed with his determination, and it was subsequently compared with a series in the Natural History Museum (NHM).

On 7 June 2008 AJH noticed that some *Sempervivum* plants in his garden at Knaphill, near Woking (SU9658, V.C. 17 Surrey) were in poor condition with the plants having the appearance of rotting off. Closer examination showed that the outer leaves were being mined by dipterous larvae. These had fused posterior breathing tubes that are typical of larvae of Syrphidae. The affected leaves were removed and retained to rear out adult flies. Further infested leaves were removed daily as they developed until 26 June. To date (18 July 2008) no adults have emerged. However, some puparia randomly picked out of the breeding containers and sent to the Plant Health and Seeds Inspectorate at the Central Science Laboratory (CSL) at Sand Hutton, York on 10 June had produced four males and one female by 26 June These were sent by Dom Collins, a CSL entomologist, to the Natural History Museum, where they were confirmed as *Cheilosia caerulescens* by Nigel Wyatt.

The plants in the garden had been purchased during the summer of 2007 and appeared to be healthy until the leaf-mining was noticed this year. The plants came from a local garden centre that had obtained the plants from a nursery in Holland. Other *Sempervivum* plants that have been growing for many years in the garden have not been affected yet, so it is likely that the infestation came in with the recently acquired plants. On 12 June a check made on

Sempervivum plants growing at RHS Garden, Wisley (TQ0658, V.C. 17 Surrey) showed that some plants there were also infested. It is likely that this destructive pest of houseleeks will be spread rapidly and widely through the distribution of plants by the horticultural trade.

Identification

Cheilosia caerulescens may be readily identified using the key by van Veen (2004). In that work, and in Stubbs and Falk (2002), it runs to the *pagana* - Group as it has a bare face, bare eyes and partly yellow legs.

Using the introductory key to groups of *Cheilosia* provided by Stubbs and Falk (*op. cit.*), the well-developed wing cloud might cause problems at couplet 1. The introduction to the Group A key – "furry bumblebee mimic" – would preclude confusion, and this comment might better be included as a confirmatory character in the group key. In the key to the *pagana* - Group further problems arise due to the inclusion of *C. latifrons* (Zetterstedt) in couplet 1.

In my specimen of *C. caerulescens* there are marginal scutellar bristles but the distinction between these bristles and the scutellar hairs is less obvious than in the other members of this group as the former are rather fine and the latter long and dense. In addition only a minority of them are black, the rest being as pale as the hairs. Examination of the series at the NHM suggests this character may be variable; most examples had some yellow bristles amongst the black ones, and in one example all were pale.

The key by Stubbs and Falk (*op. cit.*) is probably best amended by inserting a couplet between couplet 1 and 2 thus:

1 Scutellum without distinct black marginal bristles AND face with erect hairs [*latifrons*]

\- Scutellum with at least some black marginal bristles. Face bare at sides 1a

1a Wing with distinct dark central cloud, membrane around cross-veins and at base of vein R_{4+5} strongly infuscated, veins here almost black. Face strongly projecting; length from apex of knob to eye margin about twice length of third antennal segment ..... *caerulescens* (Meigen, 1822)

\- Wing with little or no trace of a cloud, membrane not infuscated, veins in central area pale yellowish to light brown. Face not strongly projecting; length from apex of knob to eye margin about equal to, or considerably less than, the length of third antennal segment 2

Description

A brief description is provided to assist recognition of this species. It is a medium-sized, rather stout species with a distinct wing cloud, tergites with a metallic blue-black reflection and face strongly projecting.

Head (Fig. 1). Antennae dark, third segment about as long as wide, arista practically bare, length of hairs a little less than diameter of shaft. Face well-developed, strongly projecting anteriorly and ventrally. Facial knob and lower facial margin brightly shining, rather strongly dusted in a band below antennal insertions, this band running forwards from eye margins over lateral parts of face. Frons brightly shining except for a narrow dust band along lateral margins. Occiput shining behind ocelli and upper angle of eyes, otherwise rather strongly and densely dusted. Zygoma rather wide and at least ventrally brightly shining.

Thorax. Dorsum brightly shining, sides slightly dull but not obviously dusted. Hairs on dorsum and scutellum pale, long and erect. A few scattered black hairs also present. Scutellum and postalar callus with marginal bristles as long as scutellum, some black and some pale. Scutellum with a transverse, subapical, concavity.

Abdomen. Rather broad, oval. Tergites and sternites brightly shining, somewhat metallic blue-black. Discs of tergites with erect hairs, not as long as those on thorax, these a variable mixture of pale and dark. Lateral margins with pale erect hairs.

Legs. Dark, tibiae more or less yellow at either end, mid and fore tarsi pale basally.

Wings. Wings with a strong central cloud formed of three spots over r-m and bases of R_{4+5} and M_3, extending onto the membrane. Stigma yellow, fairly distinct and connected to the infuscation of the central cloud. Most veins dark brown to black. Halteres pale. Wing length 6-7 mm.

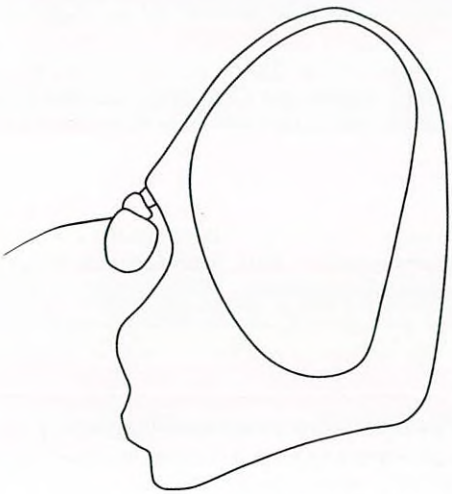


Fig. 1. *Cheilosia caerulescens* (Meigen), profile of head in lateral view.

Discussion

The larvae are miners in the leaves of species of *Sempervivum* (Crassulaceae) (known in this country as houseleeks or hen-and-chickens). These are alpine plants and the natural habitat of the fly is in mountainous areas in central Europe. However, it also occurs in lowland areas,

principally in gardens, and is currently spreading north and westwards in Europe. For example, it was first recorded in the Netherlands in 1986 and known from four localities by 1998 (Reemer 1999). Speight (2005; accessed May 2008) gave it as present in much of Europe (except for Scandinavian countries) including France, Belgium and The Netherlands.

Sempervivum has a long history of cultivation. It was probably brought to Britain by the Romans for its medicinal properties and in the Middle Ages it was grown on house roofs as a supposed protection from lightning. *Sempervivum* spp are widely grown in the UK in rock gardens and as patio plants.

Sempervivum tectorum is the most frequently attacked species, *S. montanum* and *S. arachnoideum* more rarely (Aguilar and Coutin 1988); the Natural History Museum collection contains several examples reared from *S. tectorum*. The egg is inserted between the leaves, into the heart of the rosette. The older larvae can empty a leaf within a day before moving on to the next one. Small rosettes can be killed completely. The larva pupates in the soil.

The fully grown larvae are creamy white, 8-10mm long and 2.5-3mm wide. The short posterior breathing tubes are brown and there are three pairs of acutely pointed fleshy spines on the lateral surfaces of the anal segment. These spines are themselves covered in many small spines. The puparium is yellowish brown, 7-8mm long and 3mm wide. In addition to the three pairs of spines on the posterior end, there is also a pair of spines on the dorsal surface at the anterior end of the puparium. The anterior spines are 0.75mm long and have bluntly rounded ends. These spines lean forwards but are slightly curved backwards at the tips.

In Europe it is bivoltine, with the larvae commonest in June and August/ September. Adults peak in May and July. Aguilar and Coutin (*op. cit.*) also suggested *Geum montanum* (Rosaceae), *Solidago virgaurea* and *Tussilago farfara* (both Asteraceae) as hosts, but without references.

Acknowledgements

We thank Nigel Wyatt for facilitating access to the collections at the Natural History Museum and for confirming specimens reared by AJH, Peter Chandler for checking GAC's specimen and Roger Hawkins for botanical information.

References

Aguilar, J. d' and Coutin, R. 1988. *Cheilosia caerulescens* Meigen, ravageur des joubarbes (Dipt. Syrphidae). *Bulletin de la société entomologique de France* **92,** 307-309.

Reemer, M. 1999. *Cheilosia caerulescens* in Nederland in 1998 (Diptera: Syrphidae). *Nederlandse Faunistische Mededelingen* **8,** 93-94.

Speight, M.C.D. 2005. Fauna Europaea: Syrphidae. **In** Pape, T. (Ed.). Fauna Europaea: Diptera, Nematocera. *Fauna Europaea version 1.3*, http://www.faunaeur.org [consulted June 2008].

Stubbs, A.E. and Falk, S.J. 2002. *British hoverflies*. British Entomological and Natural History Society, Reading.

Veen, M.P. van 2004. *Hoverflies of northwest Europe*. KNNV publishing, Utrecht.

Dipterists Digest 2008 **15,** 27-28

Hirtodrosophila trivittata (Strobl, 1893) (Diptera, Drosophilidae) new to Britain

IVAN PERRY
27 Mill Road, Lode, Cambridge, CB25 9EN

Summary
Hirtodrosophila trivittata (Strobl, 1893) (Diptera, Drosophilidae) is recorded as new to Britain from the New Forest, Hampshire. Known hosts of this fungicolous drosophilid are given.

Introduction and results

Two males of *Hirtodrosophila trivittata* (Strobl) were collected in Denny Wood, New Forest, Hampshire (SU334060) on 5 August 2007. They were swept from a damp, shaded gully that has some large, now well decayed, fallen beech trees across it. The gully has been a favourite collecting haunt of mine for several years now, as it provides a suitable refuge for shade-loving Diptera and on the same day three male *Paraclusia tigrina* (Fallén) (Clusiidae), thought to be the first record from the New Forest, were swept from one of the fallen trees.

Denny Wood is an ancient pasture woodland and is one of the "classic" New Forest sites. It has a mixture of oak and beech and in the past was noted for its "Cathedral Beeches," unfortunately badly damaged by the 1987 storm. However the abundance of fallen timber present makes Denny Wood a productive place for both saproxylic and fungicolous Diptera.

Identification

Hirtodrosophila trivittata is a very distinctive species and was easily identified by using Bächli *et al.* (2004), who provided an illustration. Chandler (1998) when recording it as new to France, gave a description and remarks on the striped thorax resembling a *Chlorops*. The general coloration of the fly is yellowish brown, with the legs and wings unmarked. The scutum has three black stripes which are confluent before reaching the scutellum, which is also black. The frons medially has a large blackish mark which encompasses the ocellar triangle and the first flagellomere is also black apart from the immediate base. The abdomen has four brownish-black spots on tergites 2 to 5, with two spots on tergite 1 and usually none on tergite 6. In the British specimens the spots are much larger than illustrated by Bächli *et al.* (*op. cit.*) and there is a tendency for them to be joined along the hind margins. The acrostichals in the British specimens are in six rows and using the key by d'Assis-Fonseca (1965) they would run to couplet 25, but are obviously none of the available options.

Biology and distribution

This species is known to develop in a variety of gill fungi. Yakovlev (1994) cited *Lentinus lepideus, Pleurotus pulmonarius, P. cornucopiae, P. ostreatus, Clitocybe cerussata* and *Russula delica.* It is widely distributed in the Palaearctic Region, although more common in

the south. The Palaearctic Catalogue (Bächli and Rocha Pité 1984) listed the Czech Republic, Hungary, Rumania, Sweden and Russia in Europe, as well as the far east of Russia and Japan in Asia. Chandler (1998) when adding it from France, also mentioned specimens in the Basden Collection from Korea.

Discussion

Hirtodrosophila trivittata is a very distinctive species and unlikely to be confused with any other drosophilid. The first record from France was not until 1997 and the discovery now in Britain may indicate a western expansion of its range. Although the New Forest has been well worked over the years, it continues to produce species new to the British List e.g. *Lispocephala fuscitibia* Ringdahl, 1944 (Falk and Pont 2006). If *H. trivittata* is a new colonist to these shores, its utilisation of a wide variety of fungi should enable it to become more widespread in the future.

Acknowledgements

I would like to thank Peter Chandler for confirming my identification of *H. trivittata* and providing me with information on its biology, the Forestry Commission for permission to collect in the New Forest and finally to Liz and Frank Rowland of Lyndhurst, who have been my genial hosts on my visits to the Forest in recent years.

References

Assis-Fonseca, E.C.M. d' 1965. A short key to the British Drosophilidae (Diptera) including a New Species of *Amiota*. *Transactions of the Society for British Entomology* **16,** 233-244.

Bächli, G. and Rocha Pité, M.T. 1984. Family Drosophilidae. **In** Soós, Á. and Papp, L. (Eds) *Catalogue of Palaearctic Diptera* **10,** 186-220.

Bächli, G. Vilela, C.R., Escher, S.A. and Saura, A. 2004. The Drosophilidae (Diptera) of Fennoscandia and Denmark. Leiden, E.J. Brill. *Fauna Entomologica Scandinavica,* **39,** 362 pp.

Chandler, P.J. 1998. *Drosophila trivittata* Strobl, 1893 (Diptera, Drosophilidae) new to France and notes on other French Drosophilidae. *Dipterists Digest (Second Series)* **5,** 27.

Falk, S. and Pont, A. 2006. *Lispocephala fuscitibia* (Dipt, Muscidae) new to Britain from the New Forest. *Dipterists Digest (Second Series)* **13,** 39-41.

Yakovlev, E.B. 1994. *Palaearctic Diptera associated with Fungi and Myxomycetes*. Petrozavodsk, Karelian Institute of the Russian Academy of Sciences. 125 pp.

Dipterists Digest 2008 **15**, 29-40

The British species of *Xanthochlorus* Loew, 1857 (Diptera, Dolichopodidae), with description of two new species

PETER J. CHANDLER and OLEG P. NEGROBOV*

606B Berryfield Lane, Melksham, Wilts SN12 6EL, UK

*Faculty of Biology, University of Voronezh, Universitetskaya Pl. 1, 394006 Voronezh, Russia; email: negrobov@list.ru

Summary

The British fauna of *Xanthochlorus* is increased to four species, including two new species, *X. galbanus* sp. n. (also recorded from Denmark, Hungary and Italy) and *X. silaceus* sp. n. The first has previously been misidentified as *X. luridus* Negrobov, 1978, which is therefore deleted from the British list. *Xanthochlorus statzi* nom. n. is proposed as a new name for the fossil species *Xanthochlorus tenellus* Statz, 1940, preoccupied by *X. tenellus* (Wiedemann, 1817).

Introduction

The Handbook by d'Assis-Fonseca (1978) recognised only two British species of *Xanthochlorus* Loew, *X. ornatus* (Haliday, 1832) and *X. tenellus* (Wiedemann, 1817), both of which were thought to be common and widespread. It has been known for some years that two further species are present in Britain, but the distinguishing characters and nomenclature needed clarification. Following the revision of Palaearctic species by one of us (Negrobov 1978) specimens in the Natural History Museum, London (BMNH) were examined by Dyte (1987), who drew attention to the presence in Britain of a third species which has since been known as *X. luridus* Negrobov, 1978. Its inclusion in the checklist (Chandler 1998), led to the citation of England for *X. luridus* in the world catalogue (Yang *et al.* 2006). It was also noted in the checklist (Chandler 1998: Note 15, p. 94) that a fourth unnamed species had been recognised to occur in Britain.

From examination of many collections of this genus by PJC it has become apparent that the species hitherto known as *X. luridus* is very common and widespread in Britain and that most specimens named as *X. tenellus* by d'Assis-Fonseca and subsequent collectors belonged to this species, both having more extensive yellow markings than are found in *X. ornatus*.

It should be pointed out that Statz (1940) proposed the name *Xanthochlorus? tenellus* for a fossil species from the Upper Oligocene, apparently assigned only tentatively to this genus. He evidently overlooked that *X. tenellus* was already a name in use in the genus and a new name is necessary for the fossil. We propose the new name *Xanthochlorus statzi* nom. n. for *Xanthochlorus tenellus* Statz, 1940, preocc.

Yang *et al.* (*op. cit.*) recognised twelve species of *Xanthochlorus* of which nine were cited as Palaearctic. Among them was *X. ultramontanus* Becker, 1918, which Negrobov (1991) synonymised with *X. ornatus* (reporting that the type locality, not named in the original description, was Chamonix, France) but this was questioned by Pollet (2004), who recognised it as distinct based on the description and structure of the genitalia. The remaining three species include one Nearctic species (known from USA and Canada) and two Chinese species stated to be

Oriental. However, both species were described from Shaanxi province, all of which is north of the latitude 30 degrees north and would therefore be regarded as Palaearctic using the criteria to define zoogeographic regions adopted by the published catalogues of Diptera for the Palaearctic and Oriental Regions, so the genus can be regarded as unknown outside the Holarctic Region. There is also an Oriental species, *X. tarsatus* Schiner, 1868, described from Pulo-Milu in the Nicobar Islands, India, which Yang *et al.* (*op. cit.*) listed as unrecognised. As this has a modified male hind tarsus, otherwise unknown in the genus, it is most unlikely to belong to *Xanthochlorus*.

Negrobov (1978) keyed the then known species, only the two from China having been described more recently (Olejniček 2004, Yang and Saigusa 2005). The Nearctic species *X. helvinus* Loew, 1861 and the Chinese species *X. nigricilius* Olejniček, 2004 differ from other species of the genus in having black bristles.

Pollet (2004) listed five species from Europe, of which *X. ultramontanus* was listed only from France and *X. fulvus* Negrobov (described from North Caucasus) from the South of Russia, while *X. luridus* Negrobov (also described from North Caucasus) was recorded from Greece and England, repeated by Yang *et al.* (2006). The Greek record of *X. luridus* has now been confirmed to be correct (Marc Pollet *pers. comm.*). However, following examination of British material by OPN it became clear that *X. luridus* of the British list was not that species but a previously unrecognised species that is described as new here

Biology

Xanthochlorus species occur in a wide range of woodland types, in dry as well as moist situations and their larval development is evidently terrestrial. The rearings reported here of *X. silaceus* sp. n. from moist debris in a rotting tree stump and from soil at the base of a willow (*Salix* species) are as far as we know the first for the genus.

The British species

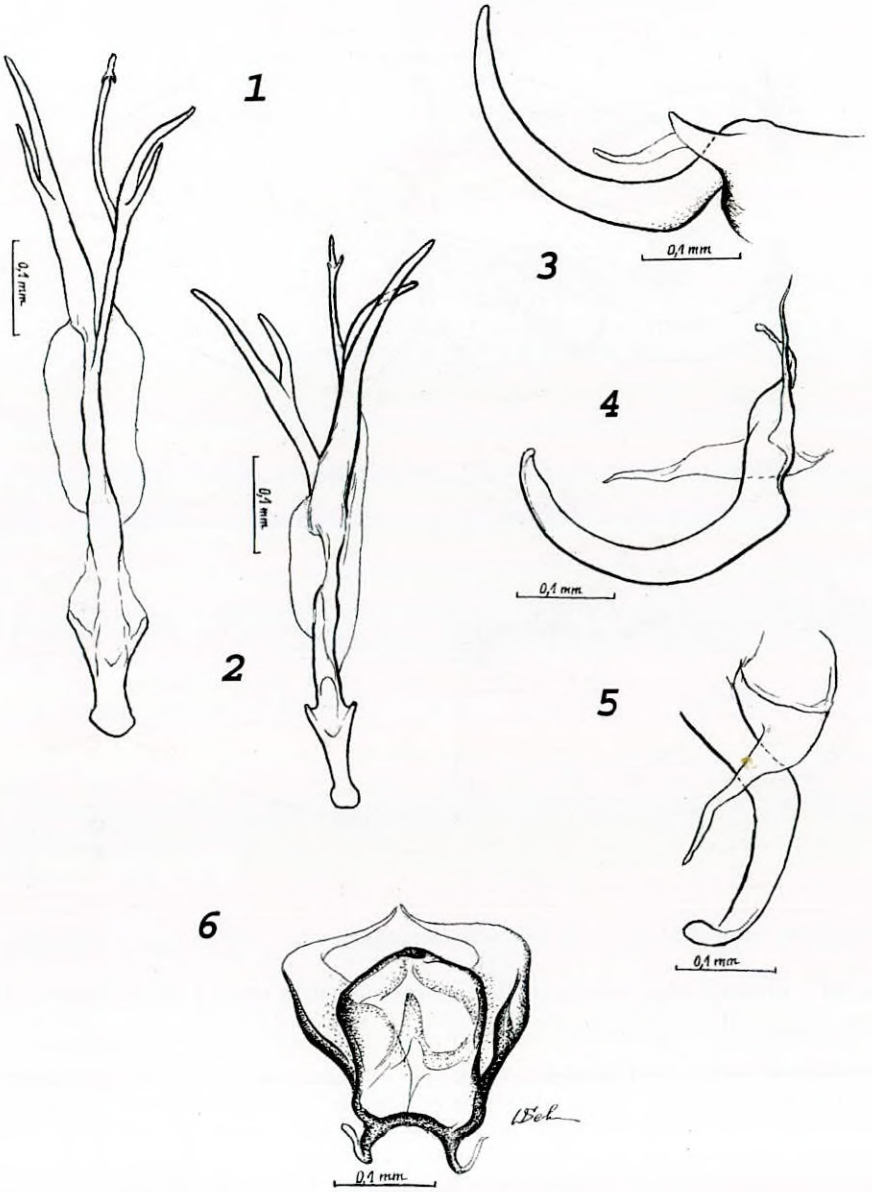
The terminology of parts of the male genitalia is indicated in Figs 9-11.

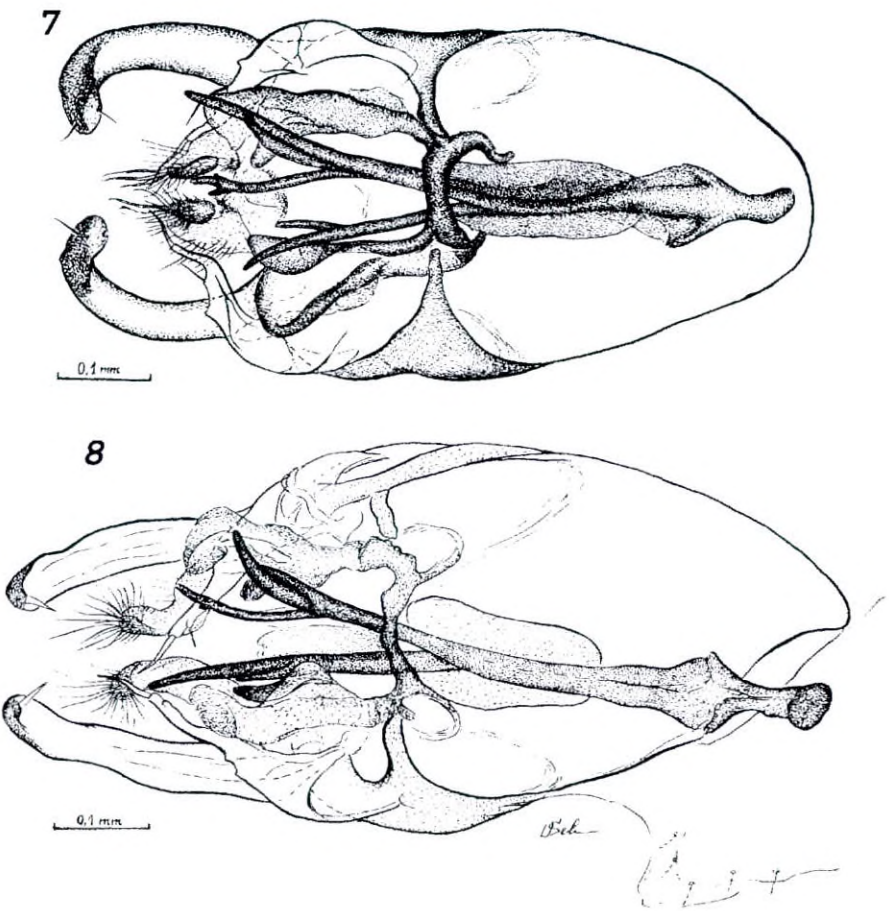
Xanthochlorus galbanus sp. n.

Male. **Head** with frons and face silver-white dusted. One pair of strong divergent ocellars and a strong vertical bristle on each side between ocellar triangle and eye. Antenna with scape and pedicel yellow, first flagellomere [postpedicel, third antennal segment] brown, oval and bluntly pointed apically, bearing white hairs. Ratio of length and width of first flagellomere to length of arista 0.5:0.7:3.8. Arista arising at the base of first flagellomere. Proboscis yellow; palpi whitish with white setae. Postocular bristles [cilia] white.

Thorax mainly yellow, including anterior and lateral parts of mesonotum and posterior margin of scutellum. Disc of scutellum and adjoining part of mesonotum brown with metallic-green to bronze sheen, this coloration on the mesonotum extending forwards beyond the suture until level of second pair of dorsocentrals, fading in front, without precise margins.

Figs 1-6. *Xanthochlorus* male genitalia: 1 and 3, *X. galbanus* sp. n.; 2 and 4-6, *X. luridus* Negrobov. 1-2, aedeagus and parameres, ventral view; 3-4, surstylus, lateral view with epandrial lobe above; 5, surstylus, ventral view; 6, hypandrium, ventral view.


1
0,1 mm
2
0,1 mm
3
0,1 mm
4
0,1 mm
5
0,1 mm
6
0,1 mm



Figs 7-8. ***Xanthochlorus*** **male genitalia, ventral view with wall of capsule removed to reveal base of aedeagus: 7,** ***X. luridus*** **Negrobov; 8,** ***X. galbanus*** **sp. n.**

Pleura yellow, with a small triangular black spot on mesepimeron immediately below the wing base and a more rectangular black spot at front corner of postnotum under scutellum. Propleura with 1 lower down-curved white bristle and 1 upper small white hair. Bristles of mesonotum brown. Five pairs of strong dorsocentral bristles. Acrostichal bristles small, irregular uniserial, only on anterior presutural part of mesonotum. A long postpronotal

(humeral) bristle on each side, convergent with each other. Strong bristles on sides of mesonotum include one posthumeral, two supra-alars, two notopleurals and one postalar. Scutellum with 1 pair of strong widely spaced medial bristles and 1 pair of small weak lateral bristles.

Legs yellow, with all 5th tarsomeres dark, latter slightly enlarged in fore tarsus. Femora with only short dark bristles. Fore tibia without strong bristles. Middle tibia with two black anterodorsal bristles, about twice as long as tibial width, situated near basal and apical quarter of tibia and with two black posterodorsal bristles basal to each of the anterodorsals, the basal one nearly as strong as them, the apical one short and weaker. Hind tibia with 6-7 short dorsal and 0-3 weak anteroventral bristles. Ratio of length of tibia and tarsomeres from the first to fifth tarsomere: fore leg 8.4:5.5:2.7:2.2:1.3:1.0; mid leg 11.7:6.9:2.6:1.8:1.0:0.8; hind leg 14.3:4.7:3.5:2.2:1.4:1.1.

Wing colourless and transparent. Ratio of length of costal segment between R_{2+3} and R_{4+5} and costal segment between R_{4+5} and M_{1+2}: 2.6:1.0. Medial parts of R_{4+5} and M_{1+2} slightly sinuous, these veins parallel in apical part of the wing and slightly divergent at tips. Ratio of length of apical and basal segments of CuA_1 is 7.4:15.0. Ratio of length of apical segment of CuA_1 and posterior cross-vein (dm-cu): 2.6-3.0:1.0. Calypters with light brown cilia; halteres yellow.

Abdomen yellow, with irregular dark markings often apparent on tergite 4 and anterior part of tergite 5, in some specimens these markings are on tergites 3 and 4, possibly representing an artifact. A row of long and strong brownish marginal bristles on tergite 1, otherwise shorter dark bristling on abdomen. Hypopygium yellow. Surstylus (= gonopod) curved medially; epandrial lobe simple and tapered apically. Aedeagus (phallosoma) with 2 parameres (paraphalli), each forked with two pointed processes apically.

Length of body 2.5-2.8mm, length of wing 3.2-3.6mm (based on 52 specimens).

Female. Very similar to male in most respects including body coloration with a similar extent of thoracic markings and vague dark patches on tergites 3-4 or 4-5. Ovipositor short and yellow.

Length of body 2.3-2.6mm, length of wing 3.2-3.7mm (based on 32 specimens).

Etymology. Latin galbanus = greenish yellow, referring to the greenish thoracic coloration on a yellow ground.

Holotype ♂, **England, Gloucestershire,** Coombe Dingle, 8.vii.1992, swept in broad-leaved woodland, leg. P.J. Chandler, deposited in National Museums of Scotland (NMS).

Paratypes: ENGLAND: Berkshire: 7♂, California Country Park, 27.vii.1996; 1♂, same locality, 6.vii.1997; 1♂, same locality, 19.vi.1998; 1♂, Dinton Pastures Country Park, Mortimer's Meadows, west bank of River Loddon, 3.viii.1996; **Buckinghamshire:** 1♂, 2♀, Hambledon Hill, 30.vi.1998; **Cambridgeshire:** 1♂, Chippenham Fen, 2.vii.1988; **Devon:** 1♂, Buck's Mills, 16.vi.1989; **Dorset:** 2♂, 1♀, Hambledon Hill, 30.vi.1998; 1♂, 2♀, Puddles Wood NNR, 30.vi.1998; **Hampshire:** 1♂, Leckford Estate, Reserve C, 27.vii.1985; 1♂, Leckford Estate, Water Garden, 21.vii.2000; 2♂, Leckford Estate, woods south of Water Garden, 23.vii.1995; **Norfolk:** 1♂, 1♀, same locality, 21.vii.2000; 1♂, East Ruston Common, 10.vii.1993; **Suffolk:** 2♂, 2♀, Barton Mills, 28.vii.1989; 1♂, King's Forest, Dale Pond,

13.vii.2003; 1♂, King's Forest, Home Heath, 13.vii.2003; 1♂, Mildenhall, 13.vii.2003 (all above leg. P.J. Chandler); 1♂, King's Forest, 8.vii.1990, leg. I. Perry; 1♂, Tuddenham Heath, bank of R. Lark, 14.viii.1979, leg. Burns, Hammond, Hutson and Huxley, BMNH. **WALES: Monmouthshire** (= Gwent)**:** 2♂, Black Cliff, 12.viii.1989, leg. P.J. Chandler. **SCOTLAND: Ayrshire:** 2♂, 1♀, Culzean Castle, cliff woodland, 16.vi.1995, leg. P.J. Chandler. **DENMARK: Sjaelland**, 1♂, Jaegersborg Ermelunden, swept in woods at south end, 26.viii.2000, leg. P.J. Chandler [some paratypes have been deposited at Voronezh University and at the National Museum of Ireland].

Other material. 133♂, 189♀, some from the above counties and also including examples from the following: **ENGLAND:** Bedfordshire, Cornwall, Cumbria, Durham, Herefordshire, Kent, Lancashire, North Yorkshire, Somerset, Surrey, Wiltshire. **WALES:** Caernarvon, Ceredigion, Glamorgan, Powys. **SCOTLAND:** Perthshire. **HUNGARY:** 2♂, 6♀, 5km north of Csakuar, 20.viii.1982, leg. J.R. Vockeroth, C.E. Dyte collection. **ITALY:** 1♂, Aosta, Gressoney St Jean, 22.vii.1991, leg. M.J. Ebejer, C.E. Dyte collection.

Distribution and biology

Xanthochlorus galbanus is common and widespread through most of Britain and the sparse continental records suggest that it is also widespread in western Europe and has probably been often misidentified in collections. In addition to the countries listed above it has also been found in Belgium (Marc Pollet *pers. comm.*). Most of the material examined was collected by sweeping in wooded habitats and it occurs in a wide range of wet and dry woodland types.

Discussion

Xanthochlorus galbanus differs from *X. luridus* in coloration and structure of the genitalia. In *X. galbanus* the mesonotum is yellow laterally and anteriorly while it is dark except for the humeral area in *X. luridus*; a few specimens of *X. galbanus* with this coloration have also been examined. Also *X. galbanus* has abdominal tergites 1-3 yellow while they are dark at least medially in *X. luridus*. Differences in the male genitalia of the two species are shown in Figs 1-8. The surstylus (= gonopod) is more gently curved in *X. galbanus* while it is strongly bent in *X. luridus*. The terminal branches of the parameres (paraphalli) also differ in their relative lengths.

***Xanthochlorus silaceus* sp. n.** (Figs 9-11)

Male. Very similar to *X. galbanus* in most respects. Differing in coloration of thorax, which is mostly yellow with a small patch of greenish sheen occupying the prescutellar area within the 5th pair of dorsocentrals (not including them) and stopping short posterior to the 4th pair of dorsocentrals; scutellum with at most a small medial patch of similar coloration on front margin; dark spots on mesepimeron and postnotum are as in *X. galbanus* and *X. tenellus*.

Legs as in *X. galbanus* with mid tibia similarly bristled, but hind tibia with bristling less developed, with 4-5 short dorsals and 0-3 weak posteroventrals.

Abdomen with vague dark coloration varying in extent and location on tergites 3-4 or 4-5 as in *X. galbanus*. Hypopygium yellow. Surstylus (= gonopod) almost straight, with preapical constriction and blunt at tip; epandrial lobe with a tapered dorsal lobe and an

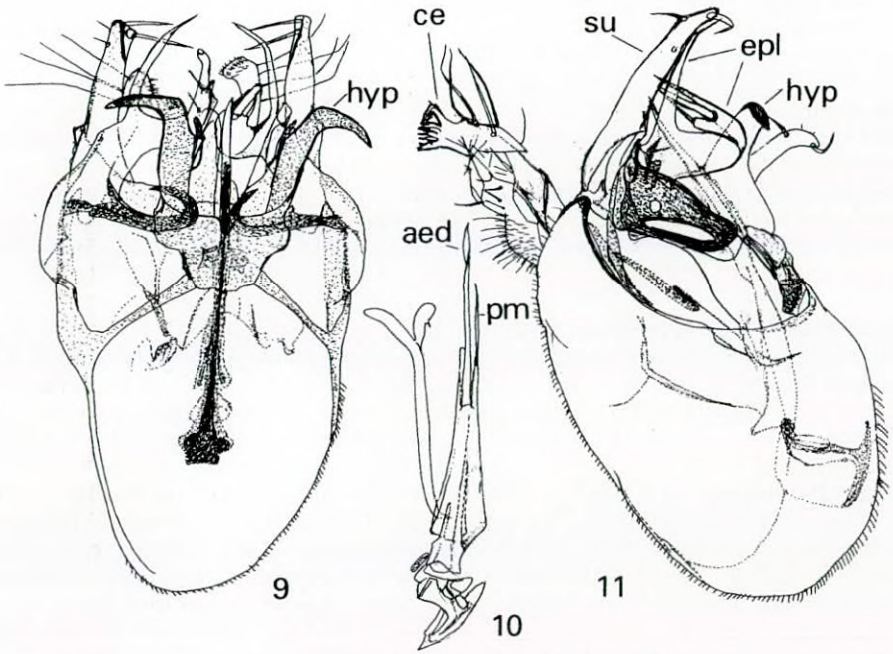
apically trilobed ventral lobe. Aedeagus (Fig. 10) without forked parameres.

Length of body 2.4-2.7mm, length of wing 2.7-3.3mm (based on 8 specimens).

Female. Very similar to male in most respects including pale body coloration, but the prescutellar patch of greenish sheen is less apparent and may be vague or absent, scutellum sometimes with a slight greenish to brown patch medially at base but may be entirely yellow. Ovipositor short and yellow.

Length of body 2.2-2.5mm, length of wing 2.7-3.1mm (based on 12 specimens).

Etymology. Latin *silaceus* = ochre yellow, referring to the predominantly yellow coloration.



Figs 9-11. ***Xanthochlorus silaceus*** **sp. n., male genitalia: 9, ventral view; 10, aedeagus and parameres, ventrolateral view; 11, lateral view: aed = aedeagus, ce = cercus, epl = epandrial lobe, hyp = hypandrial lobe, pm = paramere, su = surstylus.**

Holotype ♂, **England, Kent**, Downe, Cuckoo Wood, swept in broad-leaved woodland, 20.vii.1985, leg. P.J. Chandler, NMS.

Paratypes: ENGLAND: 1♂, 1♀, data as holotype; **Berkshire:** 1♂, 1♀, Datchet, Sumptermead Ait (SU982773), ex soil at base of willow *Salix*, collected 26.iii.2006, emerged 23.v-2.vi.2006, leg. C.E. Dyte; 2♂, Datchet, near Thames Path, ex moist debris from mossy tree stump, collected 10.iii.2007, emerged 11-13.v.2007, leg. C.E. Dyte; **Oxfordshire:** 1♀,

Bix Bottom, 17.viii.1972, leg. P.J. Chandler; **Somerset:** 4♂, 4♀, Tucking Mill, 18.vii.2006, leg. D.J. Gibbs; 3♀, same locality, 23.vii.2006, leg. D.J. Gibbs; **Surrey:** 1♂, West Horsley, Sheep Leas, 29.vi.1991, leg. P.J. Chandler; 1♂, Box Hill, 30.vii.1950, leg. L. Parmenter, BMNH. **WALES: Monmouthshire** (= Gwent)**:** 1♂, Black Cliff, 9.vii.1986; 4♀, same locality, 12.viii.1989, leg. P.J. Chandler.

Distribution and biology

Xanthochlorus silaceus is so far known only from southern England and South Wales and is apparently very local in occurrence, but will probably be found to occur in other parts of western Europe. Most specimens were swept in broad-leaved woodland, with a particular bias towards drier calcareous habitats but the reared material came from riverbank habitats by the Thames. Availability of suitable breeding sites is probably more significant.

Discussion

This species differs significantly from other species in the structure of the surstyli and especially in the complex epandrial lobe. There is some superficial resemblance in lateral view to Vaillant's figure of *X. ochraceus*, reproduced by Negrobov (1978) so it cannot be certain that it is distinct from *X. ochraceus*. However, its posterior crossvein is not closer to the wing margin than in *X. tenellus* or *X. galbanus* [see Key to West Palaearctic species below].

***Xanthochlorus ornatus* (Haliday, 1832)** (Fig. 12)

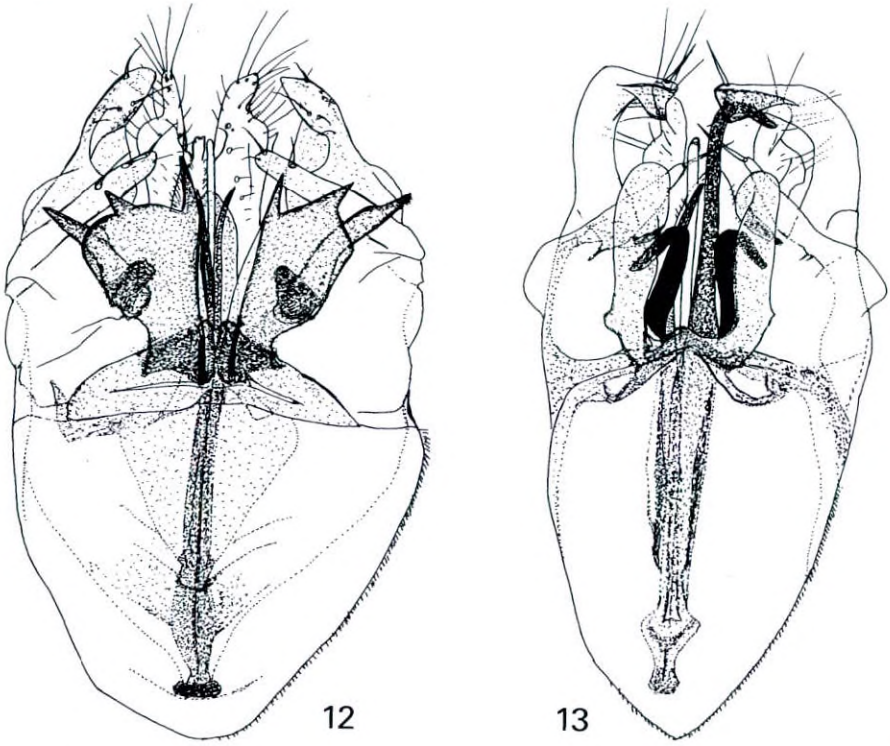
This species is very distinct from the other British species in having the thorax entirely dark coloured dorsally in both sexes and the pleura also dark in the male. It is the commonest species of the genus in the British Isles, reaching the north of Scotland and occurs in all types of wooded habitats. Dyte (1969) recorded it as new to Ireland based on a record from County Clare in BMNH.

Material examined. 227♂, 265♀. **ENGLAND:** Bedfordshire, Berkshire, Cambridgeshire, Cornwall, Cumbria, Derbyshire, Devon, Dorset, Durham, Gloucestershire, Hampshire, Hertfordshire, I. of Wight, Kent, Norfolk, Northamptonshire, North Yorkshire, Oxfordshire, Somerset, Suffolk, Surrey. **WALES:** Caernarvon, Carmarthen, Glamorgan, Merioneth, Monmouthshire, Pembrokeshire. **SCOTLAND:** Angus, Ayrshire, Easter Ross, East Lothian, Fife, Inverness-shire, Morayshire, Nairn, Perthshire, Sutherland. Also seen from **FRANCE:** (Eure et Loir, Lozère), **GREECE**, **ITALY**, **SPAIN**, **SWEDEN**.

***Xanthochlorus tenellus* (Wiedemann, 1817)** (Fig. 13)

This species is very similar to *X. silaceus*, having a similar extent of greenish coloration on the thorax, restricted to the prescutellar area between the posterior dorsocentrals but in *X. tenellus* this is rather more defined and almost as distinct in the female as in the male. This species is widespread in Britain but less frequent than *X. galbanus*. In England most records are from the eastern counties and it appears particularly frequent in the Breckland, but like other species occurring in both wet and dry wooded habitats. Haliday (1833) recorded it from

Ireland but Dyte (1969) did not know of any more recent records and its occurrence there requires confirmation.



Figs 12-13. Male genitalia, ventral view: 12, *X. ornatus* (Haliday); 13, *X. tenellus* (Wiedemann).

Material examined. 27♂, 7♀. **ENGLAND: Bedfordshire:** 1♂, The Clappers, 11.vii.1997, leg. P.J. Chandler; **Cambridgeshire:** 1♂, Cambridge, Paradise, 1.viii.1987, leg. I. Perry; 2♂, Devil's Ditch, 2.vii.1995, leg. I. Perry; 1♀, Woodwalton Fen, 6.vii.1970, leg. J.H. Cole; **Norfolk:** 1♂, Barnham Cross Common, 14.vii.1988, leg. P.J. Chandler; **Suffolk:** 1♂, Newmarket, Sussex Lodge, 21.vii.1885, leg. G.H. Verrall, BMNH; 1♂, Tuddenham Heath, bank of R. Lark, 14.viii.1979, leg. Burns, Hammond, Hutson and Huxley, BMNH. 1♂, Tuddenham, 13.viii.1906, leg. G.H. Verrall, BMNH; 1♂, Brandon, 8.vii.1877, leg. G.H. Verrall, BMNH; 1♂, Cavenham Heath, 13.vi.1988, leg. I. Perry; 1♂, same locality, 18.vi.1994, leg. I. Perry; 1♂, King's Forest, 24.vi.1989, leg. I. Perry; 1♂, same locality, 18.vi.1994, leg. I. Perry; 1♂, same locality, 2.viii.1997, leg. I. Perry; 1♂, King's Forest,

Home Heath, 16.vii.2003, leg. P.J. Chandler; 1♂, 1♀, RAF Barnham, 28.vi.1995, leg. J.H. Cole; **Surrey:** 1♂, West Horsley, Sheep Leas, 29.vi.1991, leg. P.J. Chandler; 3♂, 1♀, West Horsley, Sheep Leas, 29.vi.1991, leg. P.J. Chandler; 2♂, 2♀, Frensham Great Pond, 23.vi.2001, leg. P.J. Chandler. **SCOTLAND: Perthshire:** 1♂, Pass of Killiecrankie, 1.viii.1975, leg. P.J. Chandler; **Western Isles:** 1♂, 1♀, Kerrera, 30.vi.1999, leg. P. Skidmore. **AUSTRIA: Carinthia:** 1♂, near Faak am See, 3.vii.1992, leg. C.E. Dyte. **CZECH REPUBLIC: Bohemia:** 2♂, centr. Sulava (v Prahy), 1.vii.1964, leg. J. Macek, C.E. Dyte collection. **SWITZERLAND: Neuchâtel:** 1♂, 1♀, Rochefort, dry *Quercus* woods, 15.ix.1997, leg. P.J. Chandler.

Key to British species of *Xanthochlorus* Loew

Males are most readily identified from the distinctive structure of their genitalia. The females have a simple ovipositor with short cerci and external specific differences in structure have not been discerned. Jonathan Cole (*pers. comm.*) has suggested that there are specific differences in an internal weakly sclerotised structure in three species he had examined and further study of this, with females that have been positively associated with the corresponding male, would be desirable to confirm whether these are reliable structural differences.

1. Mesonotum and scutellum entirely dark, greenish or bronze and grey dusted; pleura dark in male, yellowish in female ..... *ornatus* (Haliday)
- Mesonotum and scutellum at most partly dark on disc, more or less yellow at front and sides; thorax otherwise yellow including pleura in both sexes 2

2. Mesonotum with greenish or bronze coloration extending forward beyond the suture until level of second pair of dorsocentrals, sometimes covering most of mesonotum in male. Male with parameres markedly forked (Figs 1, 8); surstylus curved on apical part in lateral view (Fig. 3) ..... *galbanus* sp. n.
- Mesonotum with greenish or bronze coloration at most restricted to a prescutellar patch within the dorsocentrals and not reaching 4th pair anteriorly. Male with parameres unforked 3

3. Surstylus in lateral view curved in an arc; epandrial lobe slender and not bilobed (Fig. 13). Prescutellar patch usually well defined in both sexes ..... *tenellus* (Wiedemann)
- Surstylus in lateral view almost straight; epandrial lobe bilobed with ventral lobe itself trilobed apically (Fig. 11). Prescutellar patch often reduced or absent in female ..... *silaceus* sp. n.

Key to males of West Palaearctic species of *Xanthochlorus* Loew

This is a tentative key based on the key to Holarctic species by Negrobov (1978), in which *X. ultramontanus* and *X. ochraceus* were not examined and their inclusion was based on the literature. Their inclusion here must also be regarded as provisional.

As indicated above, *X. ultramontanus* Becker has, according to Becker's figures, male genitalia resembling *X. ornatus* and it is possible that is synonymous with *X. ornatus*. It is included in the key on the basis of the antennal character used by Negrobov (1978).

As discussed under *X. silaceus* that species shows some resemblance to Vaillant's figures of *X. ochraceus* and may be conspecific with it, but its posterior crossvein is not closer to the wing margin than in *X. tenellus* or *X. galbanus*, a character used to separate *X. ochraceus* in the key by Negrobov (1978) and *X. ochraceus* is also provisionally included here based on the characters used in that key,

Negrobov (1978) also keyed known females separately, excluding *X. fulvus* and the far eastern species *X. phillipovi* of which females had not been examined. It was not practicable to provide a key here that would achieve certain identification of females.

1. Antenna mainly black, scape yellow. Alps ..... [*ultramontanus* Becker]
- Antenna yellow, with first flagellomere at most partly darkened 2

2. Mesonotum dark at least on much of disc 3
- Thorax and abdomen mainly yellow, sometimes with dark prescutellar marking on mesonotum and/or dark markings on scutellum, mesepimeron or abdomen 6

3. Surstylus straight, widened apically; epandrial lobe oval (Fig. 12). Europe ..... *ornatus* (Haliday)
Surstylus curved ventrally; epandrial lobe various 4

4. Scutellum entirely dark. Epandrial lobe forming a broad plate. North Caucasus ..... *fulvus* Negrobov
- Scutellum with margin yellow. Epandrial lobe narrow, tapered and pointed apically ... 5

5. Mesonotum mainly dark with only humeral area yellow and abdomen dark at least in middle of tergites 1-3. Left paramere distinctly shorter than right paramere (Fig. 7). North Caucasus and Greece ..... *luridus* Negrobov
- Mesonotum mainly yellow, in particular laterally and anteriorly; abdomen with tergites 1-3 yellow. Parameres subequal in length (Fig. 8). Western Europe ..... *galbanus* sp. n.

6. Last section of CuA_1 twice length of posterior crossvein (dm-cu). Surstylus elbowed at tip. Algeria ..... [*ochraceus* Vaillant]
- Last section of CuA_1 three times length of posterior crossvein (dm-cu) 7

7. Surstylus in lateral view curved in an arc; epandrial lobe slender and not bilobed (Fig. 13). Greenish prescutellar patch usually distinct in both sexes. North and Central Europe ..... *tenellus* Wiedemann
- Surstylus in lateral view almost straight; epandrial lobe bilobed with ventral lobe itself trilobed apically (Fig. 11). Female with prescutellar patch often indistinct or absent. Britain ..... *silaceus* sp. n.

Acknowledgements

We are grateful for comments on the new species and on the manuscript by Marc Pollet and Peter Dyte. Jonathan Cole provided information on female characters. Peter, Jonathan, Ivan Perry, Roy Crossley, David Gibbs and Peter Skidmore also kindly enabled us to include data from their collections of this genus.

O.P. Negrobov has been supported by grant number RFBR 08-04-01623a from the Russian Fund for Basic Research. We thank Ole Selivanova for preparing the figures of *X. galbanus* sp. n. and *X. luridus* Negrobov.

References

Assis-Fonseca, E.C.M. d' 1978. Diptera Orthorrhapha Brachycera Dolichopodidae. *Handbooks for the Identification of British Insects* **IX**(5), 1-90. Royal Entomological Society of London.

Chandler, P.J. (Ed.). 1998. Checklist of Insects of the British Isles (New Series). Part 1: Diptera (Incorporating a List of Irish Diptera). *Handbooks for the Identification of British Insects* ***12(1), i-xix, 1-234, Royal Entomological Society, London.***

Dyte, C.E. 1969. A provisional list of Irish Dolichopodidae (Diptera). *Entomologist* **102,** 40-48.

Dyte, C.E. 1987. A third British species of *Xanthochlorus*. *Empid and dolichopodid study group Newsheet* **3,** 4.

Haliday, A.H. 1833. Catalogue of Diptera occurring about Holywood in Downshire. *Entomological Magazine* **1,** 147-180.

Negrobov, O.P. 1978. [Revision of species from *Xanthochlorus* Lw., genus (Diptera, Dolichopodidae)]. *Vestnik Zoologii* **1978**(2), 17-26 [in Russian, English summary].

Negrobov, O.P. 1991. Family Dolichopodidae. **In** Soós, A. and Papp, L. (Eds) *Catalogue of Palaearctic Diptera* **7,** 11-139.Akademiai Kiadó. Budapest and Elsevier, Amsterdam.

Olejniček, J. 2004. *Xanthochlorus nigricilius* spec. nov. (Diptera, Dolichopodidae) from China. *Studia dipterologica* **11,** 9-11.

Pollet, M. 2007. Fauna Europaea: Dolichopodidae. **In** Pape, T. (Ed.) Diptera Brachycera. *Fauna Europaea version 1.3*, http://www.faunaeur.org [consulted June 2008].

Statz, G. 1940. Neue Dipteren (Brachycera et Cyclorrhapha) aus dem Oberoligozän von Rott. *Palaeontographica* (*Abt. A*). **91,** 120-124, 132-140, 154-174,Tafs XX, XXI, XXIV and XXV.

Yang, D. and Saigusa, T. 2005. Insect fauna of middle-west Qinling range and south mountains of Gansu province, p. 754.

Yang, D., Zhu, Y., Wang, H. and Zhang, L. 2006. World Catalog of Dolichopodidae (Insecta: Diptera). vi + 704 pp, 45 p. China Agricultural University Press.

Dipterists Digest 2008 **15**, 41-43

Achalcus nigropunctatus Pollet & Brunhes, 1997 (Diptera, Dolichopodidae) new to Britain

C. MARTIN DRAKE
Orchid House, Burridge, Axminster, Devon EX13 7DF

Summary
Achalcus nigropunctatus Pollet & Brunhes, 1997, was recorded by suction sampling from lowland fen at Sutton Fen, Norfolk, in May and June 2007. Several specimens were found only in one small area of mixed fen including tall reed and short *Juncus*-dominated vegetation. Five other *Achalcus* species were also recorded here.

Introduction

Pollet's (1997) revision of the Palaearctic *Achalcus* included four newly described species, two of which, *A. bimaculatus* Pollet and *A. britannicus* Pollet, he recorded from Britain based on material in museums and personal collections. Another of the new species, *Achalcus nigropunctatus* Pollet & Brunhes, 1997 was described from material collected from single localities in France, Germany and Switzerland. Pollet stated that the sites were at 'higher altitudes' but gave no indication of the habitat. The discovery of *A. nigropunctatus* in eastern lowland England provided more information on its probable habitat requirements.

Records

Achalcus nigropunctatus was recorded during a survey of the invertebrates of Sutton Fen, Norfolk, undertaken for the Royal Society for the Protection of Birds (RSPB) who own the site (Drake 2008). Sutton Fen occupies one of the medieval peat cuttings that form the Norfolk Broads although none of the original open water remains except for navigable channels. Reed and sedge was cut for thatching until the middle of the 20th century but many of the beds are now overgrown derelict fen and wet scrub. Recent partial reinstatement of mowing and scrub clearance has resulted in a rich mosaic extending over about 120ha. The site lies below the 5m contour and is about 7km from the coast.

The flies were taken using a suction sampler at four closely spaced points lying within 90m of each other (TG373235). This part of the fen floats on the former Sutton Broad and is probably permanently saturated. The vegetation varied markedly within quite short distances, and where the flies were collected it ranged from sparse and short mixed vegetation dominated by *Juncus subnodulosus* (blunt-flowered rush) but with bare peat clearly visible, to tussocky mixed vegetation with low reed, dense *J. subnodulosus*, fine *Carex* sedges and *Menyanthes trifoliata* (bog bean), and finally tall reed over *Thelypteris thelipteroides* (marsh fern). This part of the fen was also noteworthy for the occurrence of the rare *Liparis loeselii* (bog orchid). One female of *A. nigropunctatus* was collected on 23 May 2007 from tall reeds and 15 adults of both sexes were collected from the three other points on 22 June 2007.

In total, 26 suction samples and 91 sweep-net samples were taken in four visits (May, June, July, September) covering a substantial area of the fen. *Achalcus nigropunctatus* was found only in the one small area. None was found in sweep-net samples taken in the same place where suction sampling collected the species, nor in samples taken in this part of the site in July and September. The fly was therefore very localised and may have a short early-summer flight period in contrast to most *Achalcus*, of which adults may be observed for many months and are often found in September and sometimes even later. High rainfall in June and July resulted in the fen flooding to a depth of about 25cm for many weeks so little peat was exposed over almost the entire site. It is therefore possible that the fly was more widespread but, like most dolichopodids here in 2007, was adversely affected by the extreme conditions.

Finding *A. nigropunctatus* near sea-level in old fen showed that the species is not restricted to high altitudes where Pollet's (1997) records originated. However, his records were based on only three locations so he had limited data to deduce preferences and he did not, in any case, assert that it was an upland species. He gave no indication of its habitat, but the English records from old fen suggest that its requirements are similar to those of several other *Achalcus* species. *Achalcus vaillanti* Brunhes, *A. cinereus* (Haliday in Walker) and *A. flavicollis* Meigen were present at three, two and one of the sampling points, respectively, making this small area the most '*Achalcus*-rich' part of Sutton Fen.

Altogether, six species of *Achalcus* were recorded at Sutton Fen. *Achalcus cinereus* and the reedbed species *A. vaillanti* were widespread but only found in low numbers in old mixed fen vegetation, and often together. Nearly all specimens of these species were found by suction sampling and they were rarely found by sweep-netting. One male *A. britannicus* was taken by suction sampling in old reed with *Cladium mariscus* (saw-sedge) on 20 July 2007 (TG368232). One male and possibly three females of *A. flavicollis* were taken by suction sampling in low sparse vegetation. This is a moderately frequent species nationally so its scarcity at Sutton Fen supported Pollet's assertion that it is rarely found in large numbers in reedbeds. One male *A. thalhammeri* Lichtwardt was swept from tall reeds at the margin of a wide ditch near a large pool surrounded by willow scrub (TG366227) on 22 May 2007. This species was first recorded in Britain from Stubb Mill, Hickling, about 6km to the east of the Sutton Fen locality (Laurence 1995). Perry (1998) gave other British records from reedbeds and mown fen. There remains only one other known Palaearctic species of *Achalcus* to find in Britain, the reedbed species *A. phragmitidis* Pollet.

Identification

The key provided by Pollet (1997) works well for males, but less convincingly for females, and there is no need to repeat it here. Pollet's excellent figures of the smaller parts of the genitalia provide confirmation of the identification of males of all species. Both sexes of *A. nigropunctatus* are immediately distinguished from other yellow *Achalcus* by a distinct oval black spot on the thoracic dorsum in front of the scutellum; this area is entirely yellow in other pale species. *Achalcus nigropunctatus* is also noticeably smaller than other yellow species except *A. bimaculatus* Pollet.

Acknowledgements
The survey was funded by the RSPB. I thank Dr Jane Sears, Ian Robinson and Tom Bridge of the RSPB for their help with the work. David Gibbs and Peter Chandler kindly agreed with my identification of a male specimen of *A. nigropunctatus*.

References

Drake, C.M. 2008. *Survey of the invertebrates of Sutton Fen RSPB Reserve, Norfolk.* Unpublished report to the Royal Society for the Protection of Birds.

Laurence, B.R. 1995. Abundance and rarity of Dolichopodidae (Diptera) in East Anglian wetlands, with an addition to the British list. *Entomologist's monthly Magazine* **131,** 95-105.

Perry, I. 1998. *Achalcus thalhammeri* Lichtwardt (Diptera, Dolichopodidae), in Cambridgeshire. *Dipterists Digest (Second Series)* **5,** 69.

Pollet, M. 1997. Systematic revision and phylogeny of the Palaearctic species of the genus *Achalcus* Loew (Diptera: Dolichopodidae) with the description of four new species. *Systematic Entomology* **21**(1996), 353-386.

Further flower visits by *Xylota segnis* (Linnaeus) (Diptera, Syrphidae) - Further to my note on *Xylota segnis* as a flower visitor (Morris, R.K.A. 2005. *Xylota segnis* (Linnaeus) (Diptera, Syrphidae): a regular flower visitor. *Dipterists Digest (Second Series)* **12,** 95) a visit to Galloway this May (24 to 26.v.2008) afforded further opportunities to observe flower visiting by *Xylota segnis* (Linnaeus). One of the main attractions for hoverflies was hawthorn *Crataegus monogyna* blossom. On three separate occasions *X. segnis* was noted at hawthorn blossom, often in numbers. It was also observed paying attention to the flowers of broom *Cytisus scoparius* (several individuals) and several were also noted at rowan *Sorbus aucuparius* flowers. On the Dipterists Forum Field meeting in the Cairngorms in July 2008, a further example of flower visiting was noted at Appin, Sound of Shuna (NM928492), to valerian *Valerianella officinalis*. None of the individuals noted at hawthorn, rowan and valerian appeared to be using nectaries and seemed to be concentrating on the stamens in a manner that I believe to represent pollen feeding.

This behaviour appears to be far less common in southern England. Visits to buttercups *Ranunculus* sp. are most frequently reported. On 31 May 2008 I noted *X. segnis* at buttercup (a roadside verge at TF400710 in North Lincolnshire) and was able to watch its behaviour. On this occasion it was zigzagging across the petals quite evidently feeding on pollen as it normally does when working leaf surfaces – **ROGER K.A. MORRIS,** 7 Vine Street, Stamford, Lincolnshire PE9 1QE, roger.morris@dsl.pipex.com

Two species of *Chrysotus* (Diptera, Dolichopodidae) new to Japan

- Only one species of this genus, *Chrysotus nudisetus* Negrobov & Maslova, 1995 was hitherto known from Japan (Negrobov, O.P. and Maslova, O.V. 1995. Revision palaearctic species of the genus *Chrysotus* Mg. (Diptera, Dolichopodidae). *Entomological Review* **74**(2), 456-466.). Two species of the genus new for the Japanese fauna were found in the collection of the Zoological Institute of the Russian Academy of Sciences. These were:

***Chrysotus pulchellus* Kowarz, 1874: 461** (*Verhandlungen der.zoologisch-botanischen Gesellschaft in Wien* **24** (Abh.)). Jumoto-Motohacone, Nippon, 18.VII.1908 (2♀, Roshkovsky), 31.VIII.1917 (3♂, Roshkovsky).

***Chrysotus cilipes* Meigen, 1824: 41** (*Systematische Beschreibung* 4). Misaki, 22.VIII.1917 (1♀, Roshkovsky).

This work has been supported by grant number RFBR 08-04-01623a from the Russian Fund for Basic Research - **O.P. NEGROBOV, O.O. MASLOVA and O.V. SELIVANOVA,** Faculty of Biology, University of Voronezh, Universitetskaya pl. 1, 394006 Voronezh, Russia; email: negrobov@list.ru

New data on the systematics of some species of *Sympycnus* Loew, 1857 (Diptera, Dolichopodidae) –

Two taxonomic changes have resulted from study of the collection of Theodor Becker (Museum für Naturkunde in Berlin).

***Nematoproctus praesectus* Loew, 1869: 292** (Beschreibung europäischer Dipteren **1,** xvi + 1-310) = *Sympycnus imperfectus* Becker, 1918: 107, **syn. n.** (Dipterologische Studien. Dolichopodidae. Paläarktische Region Erster Teil. *Nova Acta Academiae Caesarea Leopoldino-Carolinae Germanicum Naturae Curiosorum* **104,** 35-214). The holotype male is labelled "Ungarn [= Hungary], Strafska, 24 VII"; the type locality is now in Slovakia.

Van Duzee (1933. Preoccupied names of dolichopodid flies and new names proposed for the species. *Entomological News* **4,** 151-152) proposed the new name *Sympycnus bullocki* Van Duzee for the preoccupied name *Sympycnus imperfectus* Van Duzee, 1929 (Tropical American Diptera or two-winged flies of the family Dolichopodidae from central and south America. *Proceedings of the United States National Museum* **74**(10), 1-64).

***Telmaturgus nodicornis* (Becker, 1922), comb. n.** = *Sympycnus nodicornis* Becker, 1922: 100. (Dipterologische Studien. Dolichopodidae der Indo-australischen Region. *Capita Zoologica* (*Den Haag*) **1**(4), 247 pp.). The specimen labelled "Tainan, V.I2, Formosa, H. Sauter" is a syntype as this species was described from three males and two females, one male in the Stettin Museum and the other specimens (presumed destroyed) at the Hungarian National Museum. It is here designated lectotype to fix the name of the species. The specimen is considered to belong to *Telmaturgus* Mik, 1874, as it has 4 dorsocentral bristles and the apical part of the arista is enlarged.

This work has been supported by grant number 08-04-01623 a from the Russian Fund for Basic Research - **O.O. MASLOVA, O.P. NEGROBOV and O.V. SELIVANOVA,** Faculty of Biology, Voronezh State University, Voronezh, Universitetskaja pl. 1,394006, Russia; email: negrobov@list.ru

Dipterists Digest 2008 **15**, 45-46

Ceranthia tenuipalpis (Villeneuve, 1921) (Diptera, Tachinidae) new to Britain

IVAN PERRY
27 Mill Road, Lode, Cambridge, CB25 9EN

Summary
Ceranthia tenuipalpis (Villeneuve, 1921) (Diptera, Tachinidae) is recorded as new to Britain from Loch an Eilein, Inverness-shire. Its distinction from allied species is given and notes on its known biology and distribution are provided.

Introduction and results

A female *Ceranthia tenuipalpis* was collected at Loch an Eilein, East Inverness-shire (NH896080) on 30 June 2007. It was swept low down from suckering aspen *Populus tremula* in a grassy clearing, by the edge of the loch. Several mature aspen trees are present on the edge of the clearing and have produced an extensive area of suckers into the open grassland. Loch an Eilein is surrounded by native pine trees *Pinus sylvestris*, being part of Rothiemurchus Forest, with birch *Betula* and juniper *Juniperus* frequent components of the woodland. The clearing is very different in nature from the surrounding area, being botanically diverse on more fertile soils, probably the result of former cultivation.

Identification

Amongst the Tachinidae, the Siphonini can be some of the more difficult species to identify and the genus *Ceranthia* is normally no exception. However, using the keys provided by Andersen (1996), the specimen of *C. tenuipalpis* was identified with relative ease. When using Belshaw (1993) it runs to *C. lichtwardtiana* (Villeneuve) in the supplementary key for *Actia* etc.; however, along with *C. tristella* Herting added to the British List by Andersen (1996), it lacks the large lateral areas of yellow on the abdominal tergites present in *C. lichtwardtiana*. From *C. tristella* it can be distinguished by having the tergites more densely greyish - white pollinose, without a trace of a median dark vitta, or a narrow yellow band along the hind margins. In the female, tergites 3 - 5 have lateral discal setae, absent in *C. tristella*. Both British species of *Ceranthia* missing from the handbook by Belshaw (1993) will be included in a revised handbook to the Tachinidae (Raper and Smith in preparation).

Biology and distribution

Andersen (1996) cited the 1935 Finnish record of a male reared from an unidentified geometrid larva on *Populus tremula* and apart from this the biology is unknown. He gave the flight period as 1.v to 24.vii, representing two generations per year. However, the early record is the emergence date of the reared specimen and with most of the other records much later, the statement that *C. tenuipalpis* is bivoltine seems unproven.

Ceranthia tenuipalpis is known from scattered records in central and northern Europe, but is very rare wherever it occurs. It has been recorded from Denmark, Sweden, Finland, Germany, Russia and the Czech Republic (Andersen *op. cit.*).

Discussion

With the only rearing record of *C. tenuipalpis* from a host feeding on aspen, the capture of the British specimen on the same tree appears more significant. The fact that it was swept from low growing suckers, may indicate that the rare geometrid moth the Dark Bordered Beauty *Epione vespertaria* (Linnaeus) could be a possible host. Its caterpillars feed only on aspen less than 50cm tall and it has been recorded nearby (Waring *et al.* 2003).

With many of the Siphonini rare and difficult to find, the prospect of further species waiting to be discovered in this country seems most likely. In Scandinavia the use of Malaise traps has been an effective method of obtaining material and use of this technique, especially in Scotland, is likely to reveal further additions.

Acknowledgements

I would like to thank Chris Raper and Matthew Smith for confirming my identification of *C. tenuipalpis* and the Rothiemurchus Estate for allowing me to collect at Loch an Eilein.

References

Andersen, S. 1996. The Siphonini (Diptera : Tachinidae) of Europe. *Fauna Entomologica Scandinavica* **33,** 148 pp. Leiden, E.J. Brill

Belshaw, R. 1993. Tachinid flies. Diptera : Tachinidae. *Handbooks for the Identification of British Insects* **10** (4a(i)), 169 pp. Royal Entomological Society, London.

Tschorsnig, H.-P and Herting, B. 1994. Die Raupenfliegen (Diptera: Tachinidae) Mitteleuropas: Bestimmungstabellen und Angaben zur Verbreitung and Ökologie der einzelnen Arten. *Stuttgarter Beiträge zur Naturkunde. Serie A (Biologie)* **506,** 170 pp.

Waring, P., Townsend, M. and Lewington, R. 2003. *Field Guide to the Moths of Great Britain and Ireland*. British Wildlife Publishing. 432 pp.

Dipterists Digest 2008 **15**, 47-51

Atylotus rusticus (Linnaeus, 1761) (Diptera, Tabanidae) in Britain

ANDREW GRAYSON and ALAN E. STUBBS*
11, McMahon Drive, Clayton Heights, Queensbury, Bradford, BD13 1HD
*181, Broadway, Peterborough, PE1 4DS

Summary
The known British history of *Atylotus rusticus* (Linnaeus, 1761) is given. Conclusions are that despite recent discoveries in southern England, *A. rusticus* remains a rare British species that is conservation dependant as regards hydrology and grassland management. Observations by the Dipterists Forum suggest that larvae of *A. rusticus*, which undoubtedly develop on levels and in similar habitats, do so in drier meadows with uneven surface topography, more than in adjacent ditches and flood-pans. Both sexes of *A. rusticus* are now known to attend flowers. Blood-meal searching females will attack man.

Introduction

By the end of the 20th century, *Atylotus rusticus* (Linnaeus, 1761) had been known as a British insect for over 170 years, yet the national records were very meagre. In contrast, there has been a relative glut of *A. rusticus* records during recent years, including remarkable discoveries of extensions to its known British range. Nevertheless, *A. rusticus* has only been found in quantity on 'levels' or in similar grazing marsh habitat. The term 'levels' refers to the extensive flat areas on lowland flood-plains and coastal plains, which typically are used for grazing, and utilise ditches to partition the grassland into fields. Historic records had suggested that the Pevensey Levels in East Sussex were the British stronghold of *A. rusticus*; and here, during the Dipterists Forum 2006 summer field meeting based at Lewes it was encountered in abundance at several sites.

19th and 20th century references to *Atylotus rusticus* in Britain

Atylotus rusticus was included in both Stephens' lists issued during 1829, thus it was a relatively early addition to the British Diptera list. Whilst there were many errors of identification in the formative years of Tabanidae taxonomy, Stephens' claim is probably acceptable; indeed, his collection contained a male and female, probably British, but without locality labels (Austen 1906, Verrall 1909). Curtis (1829) included *A. rusticus* in his list with a query, and subsequently accepted it as British (Curtis 1837). Duncan (1836-37) regarded *A. rusticus* as being common in Cambridgeshire [plausibly correct at that time] but scarce in Scotland [probably a spurious statement referring to other species]. Walker (1851) presumably based his rudimentary distributional comments on Duncan (1836-37) as he stated that *A. rusticus* was "Not Common" in Britain, and recorded it from both England and Scotland. Austen (1906) stated that the British Museum (Natural History), now The Natural History Museum, contained a male *A. rusticus* collected in north-east Essex by W.H. Harwood; however, this specimen was not mentioned by Oldroyd (1939), and was presumably in error for *Atylotus latistriatus* (Brauer, 1880).

Verrall (1909) stated "*A. rusticus* is uncommon in Britain, and all my specimens were taken in Sussex; Mr J.H.A. Jenner took one male and four females near Lewes [probably Lewes Brooks] in 1882 and 1883, the females having been taken on July 16 and 17 and the male on September 6, and I have a female which was taken near Eastbourne [probably Pevensey Levels] in July 1900. The Cambridge Museum possesses two females which were taken by Mr [Charles Cardale] Babington (the celebrated botanist) at Monk's Wood, Hunts, on June 9, 1828, and there are two specimens in the old collection of J.F. Stephens in the British Museum."

20th century authors had little to add to Verrall's records. Goffe (1931) mentioned contemporary captures of *Atylotus rusticus* from East Parley, Dorset, and Brockenhurst, Hampshire; however, Oldroyd (1939) stated that these records were erroneous, and referred to a form of *Atylotus fulvus* (Meigen, 1804). Shirt (1987) summarised the data given by Verrall (1909) and mentioned single records from near Lewes in the 1960s and the Pevensey Levels in 1981. Drake (1991) gave a record from Farlington, Hampshire. Falk (1991) included a record from Bradwell, Essex, 1986. In part alluding to records previously published by Shirt (1987), Stubbs and Drake (2001) mentioned "a specimen from near Lewes in the early 1960s (A. Jones), a male from Manxey Level, part of Pevensey Levels, near Eastbourne on 16 July 1981 (I.F.G. McLean), and another male also from Pevensey Levels in 1996 (M. Jenner)." Chvála *et al.* (1972) and Oldroyd (1969) included further brief references.

21st century references, records and observations

Since the turn of the millennium, there have been a number of interesting discoveries of *Atylotus rusticus* away from the Pevensey Levels area. Stubbs (2004) reported a male taken in a walled garden at Groombridge Place (TQ533376), West Kent (V.C. 16), on 4.viii.2003. Webb and Smith (2004) gave details of *A. rusticus* captures at Long Herdon and Grange Meadows Reserve (SP648202), Buckinghamshire (V.C. 24), it having been taken on 29.vi.2002, 19.vii.2002 and 29.vi.2003. J.A. Webb (*pers. comm.* to AG 2006) had found *A. rusticus* in one particular field at Long Herdon and Grange Meadows every year since 2002, and noted both sexes feeding at *Achillea ptarmica*, *Oenanthe* and *Centaurea nigra*, which are the most abundant flowers on site at the time of *A. rusticus* emergence. Storey *et al.* (2006) gave two further localities: Otmoor Rifle Range (SP574131), Oxfordshire (V.C. 23), from where a male and female were taken on 9.vii.2005, and Barn Field, Cuckmere Valley (TQ535047), East Sussex (V.C. 14), 9.vii.2005, when four females were collected from a pony, and 18.vi.2006, when a further female was taken. Members of the Dipterists Forum also saw a female *A. rusticus* on the same pony at Barn Field on 27.vi.2006.

There have also been recent discoveries of *Atylotus rusticus* at altitude in Sussex. On 29.vi.2006, M.A. Howe found a male on scrub beside a ride at Lullington Heath, TQ5401, which is on top of the South Downs, and more than a kilometre from potential breeding habitat on river floodplain. On 30.vi.2006, he swept another male at TQ447087 on Mount Caburn, a chalk hill close to the Lewes Levels. During recent years, S.J. Falk (*pers. comm.* to AG 2006) has taken both sexes at altitude in Sussex by sweeping *Heracleum sphondylium* on chalk downland; he has found *A. rusticus* at eight such chalk downland sites, and often several kilometres from levels.

In view of the previous paucity of British records, it was remarkable that members of the Dipterists Forum encountered *A. rusticus* in abundance on parts of the Pevensey Levels during 2006. Grayson and Stubbs (2008) give details of these encounters, which are summarised here. On 28.vi.2006, mass emergence was observed in two areas of levels on Montague Farm, part of Hankham Level. Unrelenting strong winds affected the visit to the first area, centred on TQ641054; nevertheless, *A. rusticus* was found in reasonable numbers. Far greater numbers occurred in the second area, centred on TQ625064, probably because the site was more sheltered and increasing temperature and abating winds were more favourable to tabanid activity. In the first Montague Farm area, teneral flies were mainly found feeding on *Trifolium pratense* in a field which was very slightly elevated above the adjacent ditches and flood-pans. This field was ungrazed, and contained such species as *Hordeum secalinum*, *Trifolium pratense*, *T. repens* and *Lotus*. Also in the vicinity, *A. rusticus* males were noted feeding on *Cirsium*, a female was netted in the middle of a mown meadow whilst it flew around the legs of the captor, and teneral males and females were swept along the margins of ditches. Both sexes were also found in wet grassland at TQ64130540. In the second Montague Farm area, newly-emerged *A. rusticus* occurred in abundance in a fairly dry ungrazed meadow. Both sexes were observed feeding on *Trifolium pratense*, *Cirsium*, and *Ranunculus*, and also on *Oenanthe* by the edge of a ditch.

Members of the Dipterists Forum found *A. rusticus* in numbers on Pevensey Levels on two further occasions during this meeting. During warm calm weather on 29.vi.2006, both sexes were abundant at Pevensey Levels NNR, centred on TQ666074. Many *A. rusticus* were feeding at flowers, including Apiaceae, but most observations were of males feeding on *Cirsium*. During hot weather on 30.vi.2006, numerous females attempted blood-meal attacks in a field on Hooe Level, close to Norman's Bay. Most attacks occurred along the bank of a watercourse between TQ687063 to TQ687058. One male was seen perched on emergent ditch vegetation. References to aforementioned discoveries are in Chandler (2003) and Stubbs (2003, 2006).

Ecological notes

After much entomological field-work during recent decades, there is now a good body of experience and data for most of the key southern British levels areas. Thus the enigma: why is *A. rusticus* on Pevensey Levels, but seemingly absent from other coastal levels that have been investigated? The probable concise answer is that ecological conditions currently available on most British levels are unsuitable for the life-cycle requirements of *A. rusticus*.

On the Pevensey Levels, members of the Dipterists Forum found that mass emergence was concentrated on good quality ungrazed grassland with uneven surface topography, and containing such plants as *Hordeum secalinum*, *Trifolium pratense* and *Lotus*. Aside from the Pevensey Levels, many other levels lack variation in surface topography, and can be intensively grazed; moreover, most have had their grasslands agriculturally 'improved', or, combined with deep-ditching, have been converted to cereal production. Field management and climatic influence on hydrology must be important factors in the suitability of breeding habitat. Compared to many other grazing marshes, Pevensey Levels scarcely flood during

winter; however, the sites at which *A. rusticus* was found during the Dipterists Forum field meeting are exceptions that may be more saturated during the winter period.

Both sexes of newly-emerged *A. rusticus* visit a range of flowers; this seems important, or possibly essential. From the above observations it was concluded that *Trifolium pratense* and *Cirsium* were key energy sources in the Pevensey Levels. *Trifolium pratense* is generally absent in most other British levels areas. There is now evidence of some dispersal of both sexes from breeding localities, including to altitude, and evidence of *A. rusticus* females seeking a blood-meal from man.

Detecting the presence of horseflies can be difficult, so proof of presence let alone absence can be a matter of luck rather than reflect the true status of the insect. On levels, the intuition of the dipterist is to search ditches and flood-pans, as these are the breeding localities and emergence zones for most levels specialities. In the Pevensey Levels, members of the Dipterists Forum found *A. rusticus* beside ditches and in flood-pans, but these were apparently not the places of mass emergence.

Plants mentioned

Scientific and vernacular names are: *Achillea ptarmica* (Sneezewort); *Centaurea nigra* (Black Knapweed); *Heracleum sphondylium* (Hogweed); *Hordeum secalinum* (Meadow Barley); *Trifolium pratense* (Red Clover); *Trifolium repens* (White Clover); *Cirsium* (thistles); *Lotus* (bird's-foot-trefoils); *Oenanthe* (water-dropworts); *Ranunculus* (buttercups).

Acknowledgements

Observations were submitted by: Stuart G. Ball, Peter J. Chandler, Jon H. Cole, Steven J. Falk, Andy J. Halstead, Mike A. Howe, Roger K.A. Morris, Mick J. Parker, Ivan Perry, Malcolm J. Smart, Chris R. Spilling, Malcolm W. Storey, Darwyn P. Sumner and Judy A. Webb. John D. Coldwell and Darren J. Mann facilitated access to certain papers.

References

Austen, E.E. 1906. *Illustrations of British Blood-sucking Flies with notes*. British Museum (Natural History), London.

[Chandler, P.J.] 2003. Diptera. **In** 2002 Annual Exhibition: Imperial College, London SW7 – 31 October 2002. *British Journal of Entomology and Natural History* **16,** 177-181.

Chvála, M., Lyneborg, L. and Moucha, J. 1972. *The Horse Flies of Europe*. Entomological Society of Copenhagen, Copenhagen.

Curtis, J. 1829. *A guide to an arrangement of British insects; being a catalogue of all the named species hitherto discovered in Great Britain and Ireland.* Westley and Davies, Sherwood and Co., Simpkin and Marshall, London.

Curtis, J. 1837. *A guide to an arrangement of British insects; being a catalogue of all the named species hitherto discovered in Great Britain and Ireland. Second edition, greatly enlarged.* Pigot and Co., Sherwood and Co., Simpkin and Marshall, London.

Duncan, J. 1836-1837. Characters and descriptions of the dipterous insects indigenous to Britain. *Magazine of Zoology and Botany* **1**, 145-167, 359-368, 453-459.

Drake, C.M. 1991. *Provisional atlas of the Larger Brachycera (Diptera) of Britain and Ireland.* Biological Records Centre, Huntingdon.

Falk, S.[J.] 1991. *A review of the scarce and threatened flies of Great Britain (Part 1).* Research and survey in nature conservation **39**. Nature Conservancy Council, Peterborough.

Goffe, E.R. 1931. British Tabanidae (Diptera): with an account of the principal variation. With descriptions of a number of new forms, and of some additions to the British list. *Transactions of the Entomological Society of the South of England* **6** (1930), 43-114.

Grayson, A. and Stubbs, A.E. 2008. Observations of *Atylotus rusticus* (L.) (Dip.: Tabanidae) in Sussex during 2006. *Entomologist's Record and Journal of Variation.***120,** 120-122.

Oldroyd, H. 1939. *Brachycera*. pp. 67-113. **In** Edwards, F. W., Oldroyd, H. and Smart, J. *British Blood-sucking Flies*. British Museum (Natural History), London.

Oldroyd, H. 1969. Diptera Brachycera: Section (a) Tabanoidea and Asiloidea. *Handbooks for the Identification of British Insects* 9 (4).

Shirt, D.B. (Ed.). 1987. *British Red Data Books*: **2**. *Insects*. Nature Conservancy Council, Peterborough.

Stephens, J.F. 1829a. *A systematic catalogue of British insects: being an attempt to arrange all the hitherto discovered indigenous insects in accordance with their natural affinities. Containing also the references to every English writer on entomology, and to the principal foreign authors. With all the published British genera to the present time.* Baldwin and Cradock, London.

Stephens, J.F. 1829b. *Nomenclature of British insects; being a compendious list of such species as are contained in the systematic catalogue of British insects, and forming a guide to their classification, &c. &c.* Baldwin and Cradock, London.

Storey, M.W., Post, R., Post, C.K. and Chainey, J. 2006. Recent records of *Atylotus rusticus* (Linnaeus, 1761) (Diptera, Tabanidae). *Dipterists Digest (Second Series)* **13,** 21-22.

Stubbs, A.[E.] 2003. Flies. **In** Wildlife reports. *British Wildlife* **15,** 132-133.

Stubbs, A.[E.] 2004. The horsefly *Atylotus rusticus* (L.) in the Central Weald. *British Journal of Entomology and Natural History* **17,** 23.

Stubbs, A.[E.] 2006. Flies. **In** Wildlife reports. *British Wildlife* **17,** 439-441.

Stubbs, A.E. and Drake, [C.]M. 2001. *British soldierflies and their allies: an illustrated guide to their identification and ecology: covering all flies (Diptera) in the families Acroceridae, Asilidae, Athericidae, Bombyliidae, Rhagionidae, Scenopinidae, Stratiomyidae, Tabanidae, Therevidae, Xylomyidae and Xylophagidae.* British Entomological and Natural History Society, Reading.

Verrall, G. H. 1909. Stratiomyidae and succeeding families of the Diptera Brachycera of Great Britain. *British Flies* **5**. Gurney and Jackson, London.

Walker, F. 1851. *Insecta Britannica. Diptera* **1**. Reeve and Benham, London.

Webb, J. A. and Smith, M. N. 2004. *Atylotus rusticus* (Linnaeus) (Diptera, Tabanidae) at the Long Herdon and Grange Meadows Reserve, Buckinghamshire. *Dipterists Digest (Second Series)* **10,** 67-68.

Dipterists Day Exhibits 2007
- compiled by Editor from exhibitors' notes

Apart from exhibits that also appeared at the Exhibition of the British Entomological and Natural History Society, notes were received only for the following exhibit.

GIBBS, D.J. Scarce Diptera collected in 2007 [grid references and Center Parcs designation given only at first mention of site]: *Tipula alpina* Loew (Tipulidae), Shortwood SO8308, Gloucestershire, 16.vi, reared from long-dead fallen beech *Fagus*, new to Cotswolds; *Idiocera bradleyi* (Edwards) (Limoniidae), new to Durham, flushes on cliffs at Busiers Hole, Easington Colliery NZ4444, 12.vii and Ryhope Dene NZ4151, 11.vii; *Symplecta chosenensis* (Alexander) (Limoniidae), new to Durham, flushes on cliffs at Busiers Hole, Easington Colliery, 12.vii; *Leia bilineata* (Winnertz) (Mycetophilidae), Longleat (Center Parcs) ST8342, Wiltshire, 2.v; *Exechia cincta* Winnertz (Mycetophilidae), Edwinstowe (Center Parcs) SK6263, Nottinghamshire, 22.ix; *Exechiopsis magnicauda* (Lundström) (Mycetophilidae), Shortwood, Gloucestershire, 24.vii; *Cordyla insons* Laštovka & Matile (Mycetophilidae), new to Cumbria, Whinfell Forest (Center Parcs) NY5826, 13.v; *Mycetophila dziedzickii* Chandler (Mycetophilidae), Edwinstowe, Nottinghamshire, 23.ix; *Anaclileia dispar* (Winnertz) (Mycetophilidae), Whinfell Forest, Cumbria, 13.v; *Machimus arthriticus* (Zeller) (Asilidae), Elveden (Center Parcs) TL8080, Suffolk, 1.vii; *Platypalpus unicus* (Collin) (Hybotidae), new to Gloucestershire, Shortwood, 8.v, swept from hawthorn *Crataegus* blossom; *Empis laetabilis* Collin (Empididae), Shortwood, Gloucestershire, 2.vi; *Hilara brevivittata* Macquart (Empididae), Longleat, Wiltshire, 2.v; *Systenus scholtzii* (Loew) (Dolichopodidae), Shortwood, Gloucestershire, 20.vi, reared from rot hole in fallen beech; *Agathomyia falleni* (Zetterstedt) (Platypezidae), new to Nottinghamshire, Edwinstowe, 23.ix; *Chalarus basalis* Loew (Pipunculidae), Edwinstowe, Nottinghamshire, 23.ix; *Eudorylas arcanus* Coe (Pipunculidae), Troopers Hill ST6273, Bristol, 19.vi; *Lonchaea palposa* Zetterstedt (Lonchaeidae), Newbridge, Bath ST7165, and Bath Western Riverside ST7364, Somerset, 30.viii, swept from sallow *Salix*; *Homoneura interstincta* (Fallén) (Lauxaniidae), Troopers Hill, Bristol, Gloucestershire, 18.vii and Newbridge, Bath, Somerset, 19.vii, swept from sallow; *Homoneura tesquae* (Becker) (Lauxaniidae), Osbourne Bridge, Bath ST7265, Somerset, 28.vi; *Homoneura patelliformis* (Becker) (Lauxaniidae), Elveden, Suffolk, 1.vii; *Ectinocera borealis* Zetterstedt (Sciomyzidae), Whinfell Forest, Cumbria, 12.v; *Chymomyza distincta* (Egger) (Drosophilidae), second confirmed British locality, Edwinstowe, Nottinghamshire, 22 and 23.ix, on cut ends of pine *Pinus* logs; *Amiota alboguttata* (Wahlberg) (Drosophilidae), Troopers Hill, Bristol, 19.iv; *Acartophthalmus bicolor* Oldenberg (Acartophthalmidae), new to Cumbria, further north than other records, Whinfell Forest, Cumbria, 13.v; *Fannia atripes* Stein (Fanniidae), Edwinstowe, Nottinghamshire, 22.ix; *Admontia seria* (Meigen) (Tachinidae), Shortwood, Gloucestershire, 16.vi, reared from rot-hole in beech; *Carcelia puberula* Mesnil (Tachinidae), Longleat, Wiltshire. 2.v.

Dipterists Digest 2008 **15,** 53-65

A Provisional List of the Diptera of Tiree

P. SKIDMORE
27 Yew Tree Road, Elkesley, near Retford, Nottinghamshire, DN22 8AY

Summary
This paper summarises knowledge of the Diptera fauna of Tiree, based mainly on recording undertaken by the author with additional data from Mr P. Wormell of Barcaldine, Ledaig near Connel and the very few published records. The species list includes 292 taxa, of which 284 are new records for the island.

Introduction

During the preparation of a Summary of the Diptera of the Western Isles (*in prep.*) it was found that only seven species had been recorded from the geographically important island of Tiree, so hoping to rectify this shortfall, the author spent four days surveying the island in late June 1999. General maps of Tiree will be found in most British road atlases, whilst the location of sampling sites require reference to the Ordnance Survey sheet number 45 (Coll & Tiree). In this paper OS grid references refer to the approximate centre points of sampling areas. Only the barest minimum of background information on Tiree is provided here. More detailed accounts such as Boyd and Boyd (1990) and Haswell-Smith (1996) should be consulted for an introduction to the island

Compared to many of the western isles of Scotland, Tiree may appear somewhat unspectacular, though the views across to the other islands can be stunning. The old Gaelic name of *Tigh-fo-Thuinn,* meaning the land beneath the waves, is highly appropriate as much of its total area of 7,834 hectares consists of a very gently undulating plain ranging from sea-level to slightly over 20m in altitude. In the west are the three rocky hills of Ben Hynish/Càrnan Mór, the highest point at 141m (462ft) and crowned by the conspicuous spherical Radar Station, the craggy westernmost headland of Ceann a Mhara rising to about 65m, and Cnoc an Fhithich with Beinn Hough around 120m in the north-west.

The surface rock throughout Tiree is almost entirely of Archaean gneiss covered in places with very shallow denuded peat and extensive blown shell-sand, dunes and machair, the shell component of the latter imparting the strong calcareous element and resulting in the very rich flora. The extant peat doubtless represents the last remnants from the distant past when early settlers started to dig it for fuel. The claim by Haswell-Smith (*loc. cit.*) that peat is absent is obviously incorrect though it has been massively denuded. The largest lakes are in the western half, Loch Phuill north of Ben Hynish, Loch Bhasapoll, west of Balephetrish, and Loch an Eilein near Crossapol. Lochans are very widely scattered as are fenland habitats, the latter especially around Loch a Phuill. Near Balephetrish ("Baile Phaedairich", the place of the storm petrel) on the north-central coast, is Balephetrish Hill, a small outcrop of metamorphosed limestone, from whence Tiree marble was quarried from 1791 to 1794 and in 1910; this also gives rise to a rich turf-flora and the southern face has a number of herb-rich flushes.

Climatically the island shares with Barra the highest annual sunshine records in the United Kingdom. Frosts and heavy snow are very unusual here, but the island is one of the windiest in Britain. Exacerbated by the high incidence of wind-eddying and an absence of natural shelter, trees are virtually absent, apart from stunted waterside willows *Salix* and a few lush gardens sheltered by high walls. In all of these respects, Tiree appears to belong climatically and structurally to the Hebrides proper (i.e. the Outer Hebrides in customary parlance).

There are many ancient human occupation sites including brochs, crannogs, hill-forts, monastery sites, etc., most of them unexcavated. The broch at Dùn Mór Vaul on the north-west coast was partially excavated and found to contain pottery and tools dating back to about 2800BP, but initial human colonisation probably long predated this. The island maintains a strong crofting community today, partially owing to the very fertile soil and climatic conditions, and sheep-grazing is intensive. The total resident human population was 768 in 1991, whilst in 1755 it stood at about 2200, doubling to a maximum of about 4430 in 1830. These details testify to a long history of human environmental exploitation of the island, initially by forest clearance and subsequently by peat extraction, excessive cultivation and gross overgrazing. All of these activities must have had a profound effect on the entomofauna.

Most visitors to Tiree will stay at Scarinish, whose harbour provides ferry access from Oban. Scarinish is indeed the ideal place from which to explore the island, occupying a near-central position on the south coast and providing easy road access to all parts. Several parts of the island were not visited during these surveys, most notably the entire western part bounded on the east by Balephetrish hamlet, the Reef and airfield, and on the south by the B8065 from Crossapol to Sandaig. Time did not permit a visit to a small stand of *Populus tremula* west of Balephetrish, nor to a trial afforestation plot near Scarinish harbour. Also, none of the higher ground was visited.

Methods

Four days were spent on Tiree from late morning on 25 to early morning on 29 June 1999. Travel on Tiree was on foot, following initially the very good road network from Scarinish. The weather was generally fine and dry with sunny periods, but a strong breeze persisted throughout the whole period, nowhere being found which offered much shelter. This somewhat impeded collecting, which was focussed on as wide a range of available habitats as possible. In each site/sampling site and subsite about 100 sweeps of the net were made and at each the entire catch was transferred to industrial spirit. The itinerary, weather conditions and sampling sites, with some ecological details are given below.

25 June 1999. I arrived at Scarinish in fine bright sunny weather at about 10.00am and followed the B8065 westwards towards Crossapol. *Tipula oleracea, Rhingia campestris* and *Chrysopilus cristatus* were seen on the road-verges at Heanish, and I took a bag of sweepings (sample **1**) from a triangle bounded by the chapel and monument at Baugh (NM023436) and the upper beach, the vegetation included *Ammophila arenaria, Trifolium repens, Festuca rubra, Galium verum* and *Plantago lanceolata* above the sandy bay. Numerous larvae of

Lycia zonaria Denis & Schiffermüller were present, and a few *Pieris napi* (Linnaeus), *Broscus cephalotes* (Linnaeus) and *Calathus erratus* Sahlberg were also seen.

I then continued to the eastern end of Tràigh Bhàig where An Fhaodhail stream passes through a culvert under the road and onto the beach. Sweeping samples were taken from the foreshore and stable dunes facing the shore, the more sheltered leeward side, and the sward between the road and the sea eastwards to the culvert, the three bags being incorporated as sample **2**. Huge numbers of *Thricops longipes* and several *Calliphora vicina* were feeding on the flowers and grasses on the dunes and machair and *Lycia zonaria* larvae were common. The vegetation on the stable dunes included *Artemisia vulgaris, Sonchus arvensis, Rumex crispus, R. obtusifolius, Ranunculus acris, Urtica dioica, Bellis perennis, Angelica sylvestris, Heracleum sphondylium, Cirsium arvense, Galium verum, Glaux maritimum, Dactylorchis* sp., etc. Sample **3** was swept from short turf and exposed silty tidal margins of An Fhaodhail by the culvert where it supported a partial algal covering (*Enteromorpha* sp.) on the silt on the upper shore, where one *Forficula auricularia* (Linnaeus) was seen. At about 17.00 I walked up the B8068 towards Gott, eastwards from Scarinish, passing some very promising-looking pastures. *Rhingia campestris* was noted again at Gott, on dandelion .

26 June. This was a dull, windy day with about half an hour of light drizzle about 15.30. I went to Barrapol dunes. *Thricops longipes* again was abundant everywhere, including large numbers amongst rank vegetation and nettles on the dunes where I took two bags (**4a, 4b**) of sweepings from the dune sward, **4a** from the west-facing slopes of dry stable dunes along the summit ridge comprising *Ammophila arenaria, Ranunculus acris, Bellis perennis, Galium verum, Carex arenaria, Trifolium repens, Plantago lanceolata*, etc. and **4b** from a near-uniform *Ammophila* sward. At site **4a** a male *Phaonia perdita* was found impaled on an *Ammophila* spike. No *Lycia* larvae were seen on the dunes at Barrapol but I found a large colony of *Aglais urticae* (Linnaeus) larvae on nettles there. Sample **4c** was from herb-rich boggy ditches beside the B8065 at about NL960432, where the flora included *Eleocharis* sp., *Eriophorum* sp., *Caltha palustris, Juncus articulatus, J. effusus, Ranunculus flammula*, etc.

27 June. This was a bright, sunny day after a rainy night. I walked to Balephetrish Bay along the B8068. Sweeping samples were collected from a rocky area and adjacent sandy foreshore to the west at Balephetrish, from the adjacent sand-dunes extensively dominated by *Anthyllis vulneraria*, from the south-facing lower slopes of Balephetrish Hill below the Fort, and from boggy areas along the verges of the B8068 back towards Gott, in unfenced and fenced sections in squares NM0248 and NM0348; also from the edge of a *Phragmites australis* bed growing in shallow peat along the outlet drain from Loch Rhiaghain, and from the sides of an outlet ditch from a lochan north of Scarinish. This ditch displayed a rich flora including *Mentha aquatica, Apium nodiflorum, Alisma plantago-aquatica, Myosotis* sp., *Carex* cf. *riparia, Hippuris palustris, Equisetum palustre*, etc. No *Prosena siberita* were seen here, but there were numerous *Thereva nobilitata* and *Polyommatus icarus* (von Rottenburg).

The most interesting place was the steep south-facing, extensively flushed slope of Balephetrish Hill where a profusion of flowers was present, and *P. icarus* was particularly numerous along with grasshoppers and *Autographa gamma* (Linnaeus). At the western end of

Balephetrish Hill and on the north side of the B8068, a lane ascends the flushed slope past the Fort, the verges covered with *Thymus serpyllum, Centaurea nigra, Trifolium campestre, Pilosella* sp. and *Galium verum*. I took two samples from this slope, the higher one on the east side of the lane dominated by *Oenanthe crocata* with *Salix repens*, the lower part to the west of the lane with *Thymus serpyllum* grading into *Pilosella, Hieracium*, etc. between them, abutting onto the lane. Sample **10** was from a boggy verge and ditch of B8068 just at the end of unfenced part.

28 June. A slightly breezy but beautiful sunny very clear day with unimpeded views to Mull, Jura, Barra, the Uists, Rum and Eigg. I walked back towards the eastern end of Traigh Bhaigh but at Baugh I followed the minor road north towards Orisgal to survey the eastern side of An Fhaodhail. Where the stream from Dun Ibrig crosses this road I swept sample **1** from the waterside west of the road where *Phragmites australis* co-dominated the sward, and *Haematopota pluvialis* was in some numbers here. From the northern end of the lane I traversed a slightly boggy, herb-rich pasture east of An Fhaodhail, heading for Orisgal ruin, the flora including *Potentilla palustris, Pedicularis palustris, Eleocharis palustris, Iris pseudacorus, Ranunculus acris* and *R. flammula, Carex* species, *Lychnis flos-cuculi, Eriophorum*, etc. The topography was interesting, comprising an almost level area with very low outcrops of bedrock largely covered by dense lichen cushions supporting *Sedum anglicum, Lotus corniculatus, Potentilla erecta, Cynosurus cristatus, Thymus serpyllum, Trifolium repens*, etc. I took two bags of sweepings from this area, which I referred to as site/sample **2** with the central point about NM016454. Two further bags of sweepings were taken in and around the ruin of Orisgal (sample **3**, centred about NM015455). A large flowering *Fuchsia magellanica* stood in a sheltered corner of the interior of this ruin and this was attracting numerous *Thricops longipes*, whilst a *Cynomya mortuorum* was seen on exposed earth by Orisgal.

I then proceeded northwards to the northernmost limit of An Fhaodhail close to Balephetrish Hill, collecting sweeping sample **4** along its margins through a sward of *Eleocharis palustris* and *Carex* species and over bare, wet silt along the water's edge. Sample **5** was taken by sweeping through the wet pasture on a parallel course but slightly east of and on fractionally higher ground than site 4, back to Orisgal through beds of *Iris pseudacorus, Juncus effusus, Molinia coerulea, Potentilla palustris*, etc. Between Orisgal and the northern end of the lane back to Baugh, sample **6** was swept from a very gentle boggy slope about NM017454 dominated by *Juncus ?articulatus* overlying *Mentha aquatica.*

I then walked back to Baugh and then right along the B8065 to the eastern end of the Traigh Bhaigh dunes, taking another sample (sample 7) from the inner-facing slopes along the roadside where I took the sample on 25 June. *Chrysops relictus* was active here. Sample **8** was from a young *Ammophila arenaria* sward on the upper shore-edge, below the high seafront dunes. The tide was low so it was possible to sweep the damp sand to the innermost outcrops of the Na h-iseanan skerries, *Scatella* and *Dolichopus* species numerous over the former, and *Fucellia* and *Aphrosylus* species over the sea-weed covered rocks in the splash-zone on the latter.

29 June. In dull weather, I walked to Vaul and Salum beaches. In the former is an extensive near-monoculture of *Ammophila arenaria* and where this overhangs the beach, beating was quite productive of insects, the most surprising of which were the ground-beetle *Badister bipustulatus* (Fabricius) and the clambid *Calyptromerus dubius* (Marsham). The chafer *Phyllopertha horticola* (Linnaeus) was also in profusion here along with *Broscus cephalotes* and *Calathus mollis* (Marsham), the mirid bugs *Pithanus markeli* (Herrich-Schäffer) and *Stenodema laevigatum* (Linnaeus), *Polyommatus icarus* and the weevil *Otiorhynchus atroapterus* (De Geer). On the shore were a few *Helcomyza ustulata*. In the extreme western corner of Salum Bay a bag of sweepings was taken from a bed of *Urtica dioica* on the shore above the tide-line. The weather was dull but fine for most of the day but then heavy rain forced me back to the hotel in Scarinish. I had intended to sample the tree-planting plot by Scarinish harbour but the weather precluded this.

From 9 to 13 July 2001, P. Wormell collected sweep-net samples mainly from sites in the extreme east and south-west of Tiree and his records are incorporated in this paper.

Summary of sampling sites

Sampling sites 1 to 16 inclusive were those of the author, sites 17 to 25 those of P. Wormell.

1. Baugh Chapel bay (1) NM023437, 25.6.
2. Baugh dunes NM017441-NM016439, 25.6.
3a. Barrapol dunes, (a) sample 1 NL942423 26.6, (b) Barrapol, sample 2 26.6.
4. Barrapol ditch, sample 3 NL960432 26.6.
5. Heylipol roadside ditch, NL981432 26 .6.
6a. Balephetrish (1) rotting seaweed mass NM011475 27.6;
6b. Balephetrish sieving sample (2), apparently from old grass-heap, comprising a mass of grass-spikelets c.NM016473 27.6;
6c. Balephetrish (3) and 6d. Balephetrish (4) from the sand-dunes in Balephetrish Bay, c. NM007472.
7a. Balephetrish hill (Site 5);
7b. Balephetrish Hill (SF), containing *Equisetum*, *Pedicularis* etc. 27.6;
7c. Balephetrish dry flowery slope above the flush with *Hieracium* dominating) 27.6.
8a. Balephetrish hill, wet flush with *Equisetum, Juncus acutiflorus, Ranunculus* sp. 27.6;
8b. Balephetrish to Gott roadside (B8068) verges (S10);
8c. 27.6. S.10 (*Juncus acutiflorus* and *effusus*, *Equisetum*, *Ranunculus* etc., from verges of B6058 east of fenced area, 8d B8068 12a fen (2), 8d B8068 (11).
9. Scarinish Boundary drain (12), *Carex, Equisetum, Juncus acutiflorus, Ranunculus* sp. 27.6.
10. Baugh dunes NM01549 28 6.
11. Dun Ibrig drain c. NM022444.
11a. Orisgal (2) NM015453;
11b. Orisgal ruin and adjacent edge of An Fhaodhail (3) NM015455,
11c. Orisgal (4) NM015462;
11d. Orisgal (5) NM016456;

11e. Orisgal (6) NM017454.
12a. Vaul Bay NM057485, beaten from marram overhanging upper shore, 29 6;
12b. Vaul Bay NM 052484, sieved from old straw bales lying on marram., 29.6.
13. Salum Bay sample 1 NM016439, swept from bed of *Urtica dioica* growing on upper shore, 29.6.
14. Scarinish Hotel, window-sills in lounge.
15. Heanish roadside verge (observations only).
16. Gott roadside verge (observations only).
17. An Fhaodhaig fen machair 9.7 P.W.
18. Traigh Bhaigh NL997435 10.7 P.W.
19. Caolas; Acarsaid an Duin NM086477 13.7 P.W.
20. Traigh Bhaigh NM013440 9.7 P.W.
21. Crossapol NL997432 11.7 P.W.
22. Rinn Chircnis NL939402 12.7 P.W.
23. Traigh Bhi NL9540 12.7 P.W.
24. Caolas NM0848 13.7 P.W.
25. Traigh Bhaigh NM013440 9.7 2001 P.W.

Results

Prior to this survey, eight species of Diptera had been recorded from Tiree in the literature and these are included in the species list below in square brackets. This 1999 study, together with small samples collected by P. Wormell, resulted in the addition of 284 species to the Tiree list, of which 28, or about 10 per cent, were new to the Western Isles. A further 15 (or 5.5 per cent had not previously been recorded from the Ebudes but were known from the Hebrides. In 2001 my old friend P. Wormell of Barcaldine, Argyll, kindly sent me the further collecting samples from the eastern end and south western corners of the island and addition of his records results in a current total of 292 species of Diptera now known to occur on Tiree. Of the species recorded here, 15 are apparently new to the Ebudes although some of these, such as *Chloromyia formosa* and *Dolichopus acuticornis*, occur widely in the Hebrides. Twenty-eight species are apparently new to the entire Western Isles area, amongst the more interesting being *Saltella sphondylii* and *Pherbellia nana*.

The strong similarity between Tiree and the Hebrides was seen in the remarkable scarcity of Nematocera, which require still conditions for nuptial swarming; chironomids were virtually absent. This presumably resulted from total clearance of scrub and forest cover by early human settlers, followed by subsequent agricultural practices maintaining a "prairie-like" landscape and increasing the island's exposure to strong winds. Whilst *Aphodius* larvae were abundant in cow and sheep-dung, no stercoricolous dipteran larvae and surprisingly few adults were seen.

Species List

All but eight of the 292 taxa in the following taxonomic list are additions to the Tiree Diptera list. The eight square-bracketed species for which records from this island appear in the literature are included here in the interests of completeness. Species names preceded by an

asterisk * have not been recorded previously from any of the inner islands (Ebudes) whilst those prefixed ** have been recorded from neither the Ebudes nor the Hebrides.

TIPULIDAE
Nephrotoma submaculosa Edwards 3b, 13
Tipula paludosa Meigen 2c, 11c, 15

LIMONIIDAE
Erioconopa trivialis (Meigen) 7a, b, 8a, d, 9, 11a, c.
Erioptera flavata (Westhoff) 9
E. fuscipennis Meigen 7b 8a, d
E. fusculenta Edwards 11a
Gonomyia dentata de Meijere 7a, 8c, 9, 11a, e, 13
Molophilus appendiculatus (Staeger) 9
M. obscurus (Meigen) 7b, 8d, 9, 11a, c.
Symplecta stictica (Meigen) 2b, e, 6c, 10, 11a, b, e
Dicranomyia autumnalis (Staeger) 7a-c, 8a, c, d, 9, 11a-e.
Phylidorea ferruginea (Meigen) 8a, 11c.

BIBIONIDAE
Dilophus femoratus Meigen 1, 2b, e, 3a, 8d, 10

KEROPLATIDAE
***Monocentrota lundstroemi* Edwards 11b

MYCETOPHILIDAE
Docosia gilvipes (Haliday in Walker) 11b
Leia fascipennis Meigen 8d
Mycomya fimbriata (Meigen) 8a
**Synapha fasciata* Meigen 7b, 11a, b, e

SCIARIDAE
***Bradysia pallipes* (Fabricius) 11b
Trichosia morio (Fabricius) 11b

ANISOPODIDAE
Sylvicola punctatus (Fabricius) 8a, 10, 11b

SCATOPSIDAE
Thripomorpha verralli (Edwards) 7a, b, 8a, c, d, 10, 11a, e.
Scatopse notata (Linnaeus) 6b,7b, 14
Coboldia fuscipes (Meigen) 6b
Colobostema nigripenne (Meigen) 7a

DIXIIDAE
Dixella martinii (Peus) 8a, c.

SIMULIIDAE
Simulium sp. 8d

CERATOPOGONIDAE
Ceratopogon lacteipennis Zetterstedt 7b, 8d, 11c
Palpomyia nigripes (Meigen) 2d, 7b, 8b, 8d, 10, 11a, b, d
P. pubescens Kieffer 2d, 8a, 9, 10, 11c [This species was identified as *P. spinipes* by Edwards and was only known to him from a specimen taken on S. Uist by Grimshaw in June 1910. It was not mentioned in the account by Grimshaw (1914), so it was evidently not identified by Edwards before Grimshaw went to press.]
P. quadrispinosa Goetghebuer 4, 8b, 8d, 11a, c, d.

CHIRONOMIDAE
Chironomus plumosus (Linnaeus) 8d.

RHAGIONIDAE

Chrysopilus cristatus (Fabricius) 4, 5, 7a-c, 8a, c, d, 9, 10 , 11a-e, 15.

TABANIDAE

Chrysops relictus Meigen 8d,11a, c.

[*Haematopota pluvialis* (Linnaeus) 2a, 7b, 8d, 9, 10, 11a, b, d, e.]

STRATIOMYIDAE

**Chloromyia formosa* (Scopoli) 2a, c, 6d, 7b, 8d

THEREVIDAE

**Thereva nobilitata* (Fabricius) 1, 2a, c, 6d

HYBOTIDAE

Chersodromia arenaria (Haliday) 13

C. hirta (Walker) 6c, 12.

Crossopalpus curvipes (Meigen) 11c.

Platypalpus minutus (Meigen) 1, 2b, c, 3b, 6d, 7a, 8d, 10, 11b.

P. nigritarsis (Fallén) 10

P. notatus (Meigen) 1, 2a-e, 3a, b, 6c, d, 7a, b, 8c, d, 10, 11a-d, 12, 13.

P. pallidiventris (Meigen) 1, 2a, b, e, 3a, 6d, 7a, 10.

EMPIDIDAE

Clinocera fontinalis (Haliday) 6a

C. stagnalis (Haliday) 2d, 6a, c, 13

Empis (*Kritempis*) *livida* Linnaeus 2a, 7b, 8d, 10, 11b.

E. (*Xanthempis*) *stercorea* Linnaeus 5,7a, b 8d, 10, 11b. (*E.*(*X*) *aemula* Loew appears to be commoner in the Ebudes, *stercorea* in the Hebrides).

Hilara chorica (Fallén) 4, 6c, 7a-c, 8a, c, d, 9, 10, 11a-e.

H. lundbecki Frey 2a, b, e, 6a, d, 8a, c, 9, 12, 13, 14. (This species appears to be commoner in the Hebrides than in the Ebudes.)

DOLICHOPODIDAE

Argyra ?perplexa Becker 8d, 22. Two females, hence the uncertainty.

Chrysotus cilipes Meigen 7a, b, 8a, c, 9, 10, 11a, c

**Dolichopus acuticornis* Wiedemann 3d

D. atratus Meigen 8a, c, d, 9, 11a, c-e

D. atripes Meigen 8c

D. brevipennis Meigen 1, 2a, b, d, 3a, b, 6a, d, 7a, b, 8a, c, d, 9, 10, 11a-d, 13, 14, 21

D. caligatus Wahlberg 19

***D. festivus* Haliday 2b

D. griseipennis Stannius 1,6c. Commoner in Hebrides, less so in the Ebudes

**D. longicornis* Stannius 2a, 11a, b. In the Western Isles only known from Lewis.

D. longitarsis Stannius 2a, 11a, b, 22

D. nubilus Meigen 19

D. pennatus Meigen 7b, 8a, 11c, d, e

D. plumipes (Scopoli) 2c, 6d,7a, b, 8a, c, d, 9, 10, 11a-e, 21, 22, 23

***D. sabinus* Haliday 2d

D. simplex Meigen 2b, e, 3a, 7a, b, 8a, c, d, 9, 10, 11a-e, 13, 24

D. ungulatus (Linnaeus) 2a, c, 3b, 6a, d, 7a, b, 8a, d, 9, 11c, d, 13, 14,

D. vitripennis Meigen 8a, c, d, 9, 11a-e

Hercostomus nigripennis (Meigen) 7a-c

Aphrosylus celtiber Haliday 2d

A. ferox Haliday *in* Walker 2d, 13

Medetera petrophiloides Parent 2c, e, 3a, 6a, 12a, 13

Thrypticus bellus Loew 9, 11a, c

Campsicnemus curvipes Fallén 4, 6a

C. loripes (Haliday) 6d, 7a, 8a, c, 9, 10, 11a, c, d, 13

C. scambus (Fallén) 7a, b, 8a, c, 9, 11a, c, 13

Micromorphus species 2b, 7a-c, 8a, c, 9, 11a, c, e [four species of this genus are known to occur in Britain but

their nomenclature has yet to be resolved: David Gibbs *pers. comm.*]

Sympycnus desoutteri Parent 1, 2a, b, 3a, b, 4, 6a, c, d, 7a-c, 8a, c, d, 9, 10, 11a-e, 12a, 13, 18

Syntormon pallipes (Fabricius) 4, 6a, 7a, 8a, d, 11a, b, 13, 23

S. pumilum (Meigen) 8a, c, 11a ,22

LONCHOPTERIDAE

Lonchoptera bifurcata (Fallén) 2b, 6d, 7a, 10

SYRPHIDAE

Syrphus vitripennis Meigen 2c, 7b

Episyrphus balteatus (De Geer) 3b, 6a, d, 7a, b, 8a, 11b, d

Eupeodes corollae (Fabricius) 7c, 24

Sphaerophoria interrupta (Fabricius) 2b, c, 7c, 8d, 9

Melanostoma mellinum (Linnaeus) 2a, c, 8c, d, 9

Platycheirus angustatus (Zetterstedt) 4, 11, 19, 24

P. clypeatus (Meigen) 1, 4, 7a, b, 8a, c, d, 9, 11a-e, 22

P. manicatus (Meigen) 1, 2a-c, 3b, 6d, 7a-c, 8a, d, 9, 10, 11a, d, 21

P. scambus (Staeger) 11b

Rhingia campestris Meigen 2a,7b, 9, 15, 16

Neoascia tenur (Harris) 7b, 8a, c, d, 9, 11a, e

Melanogaster hirtella (Loew) 4, 7a-c, 8a, c, d, 9, 10, 11a, c, e

Lejogaster metallina (Fabricius) 4, 7a-c, 8a, c, d, 9, 10, 11a, c, e, 22

Trichopsomyia flavitarsis (Meigen) 7a, 11b

[*Eristalinus sepulchralis* (Linnaeus)]

Eristalis abusivus Collin 17

[*Eristalis arbustorum* (Linnaeus) 7b, 25.]

E. horticola (De Geer) 2a, 7b, 19, 22

[*E.intricarius* (Linnaeus]

[*Helophilus pendulus* (Linnaeus) 7b, c]

Sericomyia silentis (Harris) 2a

Syritta pipiens (Linnaeus) 3b, 23

PSILIDAE

Loxocera aristata (Panzer) 7a, b, 9, 11a

***Chamaepsila buccata* (Fallén) 2a, 10

C. nigra (Fallén) 3a, 13

PIOPHILIDAE

Parapiophila vulgaris (Fallén) 10, 11b

**Prochyliza nigrimana* 8c, 11b

ULIDIIDAE

Herina frondescentiae (Linnaeus) 7a-c, 8c, 9, 11a-c, e

TEPHRITIDAE

**Campiglossa absinthii* (Fabricius) 2a, b, e

LAUXANIIDAE

Calliopum aeneum (Fallén) 2a, c, 3b, 6d, 18

**Minettia tubifer* (Meigen) 3a, b, 6d

CHAMAEMYIIDAE

***Chamaemyia aridella* (Fallén) 1,6c, d

C. flavipalpis (Haliday) 3b, 12, 13

C. geniculata (Zetterstedt) 6d

***C. herbarum* (Robineau-Desvoidy) 1, 3b, 6c, 11e

C. juncorum (Fallén) 1, 2d, e, 3a, b, 6a, d, 7a, c, 11c, 13

C. polystigma (Meigen) 2c

COELOPIDAE

Coelopa (*Coelopa*) *pilipes* Haliday 6a

C. (*Fucomyia*) *frigida* (Fabricius) 1, 2a, c, d, 3a, 6a, c, d, 7b, 8a, d, 13, 21, 23,

HELCOMYZIDAE
Helcomyza ustulata Curtis Vaul Bay (12), on foreshore.

HETEROCHEILIDAE
Heterocheila buccata (Fallén) 1, 2a, 7a, b, 8a, c, d, 9, 11c, 13

SCIOMYZIDAE
Pherbellia cinerella (Fallén) 1, 2a-c, 3a, b, 6d, 7a-c, 8a, 10, 11a, d, 13
****P. nana*** (Fallén) 11a-c, 18, 21
Hydromya dorsalis (Fabricius) 7a, b, 11a, c
[*Ilione* (*Ilione*) *albiseta* (Scopoli) 7a, 8a, c, 9, 10, 11a, c, e, 19]
I. (*Tumidicercus*) *lineata* (Fallén) 10, 11c, e
Pherbina coryleti (Scopoli) 8d, 11a, c, d, 19
Limnia unguicornis aggr. 8c, 9
Tetanocera ferruginea Fallén 10, 11a, b
T. fuscinervis (Zetterstedt) 8c, 23
T. hyalipennis von Roser 8c, 10

SEPSIDAE
[*Orygma luctuosum* Meigen Vaul Bay]
****Saltella sphondylii*** (Schrank) 21
Sepsis cynipsea (Linnaeus) 2a, 3b, 6d, 7a-c, 8a, 11b, c
S. flavimana Meigen 6d, 7a, b, 9, 21
S. fulgens Meigen 18
S. orthocnemis Frey 1, 2a, e, 7a, 8c, 9, 10, 11b
S. punctum (Fabricius) 6d
Themira annulipes (Meigen) 7a
T. lucida (Staeger *in* Schiødte) 6a, d, 7a-c, 8a, c, 9, 10, 11a-e, 21, 23
T. superba (Haliday) 2e, 8a, c, 9, 11a, c, d, 23

AGROMYZIDAE
Agromyza nana Meigen 2a, e, 6d, 7b, 8b, 11a, b
Cerodontha denticornis (Panzer) 1, 2b, 3a, b, 4, 6d, 7a, b, 8a, c, 9, 11a-c, 13
Liriomyza flaveola (Fallén) 6a, c
****L. strigata*** (Meigen) 3a, 7a, 9, 10, 11b
Phytomyza notata Meigen 1, 9
P. ranunculi (Schrank) 7a, b ,8a, d
P. varipes Macquart 2e

OPOMYZIDAE
Geomyza tripunctata Fallén 6d, 7b, 12
Opomyza germinationis (Linnaeus) 2a, 3a, b, 6d, 7a, c, 8a, 9, 10, 11b-d
O. petrei Mesnil 2b, e, 6d, 7a, b, 8a, 9, 10

ANTHOMYZIDAE
Anthomyza collini Anderson 1, 7a, b, 8a, c, d, 9, 10, 11a, b, d, e,
****A. dissors*** Collin 9
****A. elbergi*** Anderson 2a
A. socculata (Zetterstedt) 2b

CARNIDAE
Meoneura bicuspidata Collin 3b, 6a, d
M. flavifacies Collin 2a, b, 3b, 7a, b, 8c, 10
M. lamellata Collin 2d, e
M. vagans (Fallén) 2a, b, d

CANACIDAE
Tethina illota (Haliday) 2a, d

CHLOROPIDAE
Cetema simile Ismay 7a, 9
Chlorops ?hypostigma Meigen 1,2a, b, e, 6c, 7a-c, 8a, c, 9, 10, 11a, 12
C. pumilionis (Bjerkander) 11b
Melanum laterale (Haliday) 9, 11a, c
****Meromyza nigriventris*** Macquart 7a
M. pratorum Meigen 1, 2c, 3b, 4, 6d
****M. triangulina*** Fedoseeva 1, 2c, d, 3a, 6c

Elachiptera cornuta (Fallén) 2d, 8a, d, 11d
****Incertella albipalpis*** (Meigen) 2c, 3b
Oscinella frit (Linnaeus) 7a, 8c, 11c
O. hortensis Collin 1, 2a-e, 3a, 6d, 7a, c, 8a, c, 9, 10
O. nitidissima (Meigen) 4, 10, 11b

SPHAEROCERIDAE
Crumomyia nitida (Meigen) 12a, b
Lotophila atra (Meigen) 2b, 3a, b, 4, 6d, 7a-c, 8a, 9, 10, 11a-c, 13
Leptocera (*Leptocera*) *fontinalis* (Fallén) 6d, 7a, b, 8a, c, 9, 10, 11a-c
Limosina silvatica (Meigen) 6d, 12
****Minilimosina* (*Minilimosina*) *fungicola*** (Haliday) 11b
M. (*Svarciella*) *vitripennis* (Zetterstedt) 7a, 9
Opacifrons coxata (Stenhammar) 4, 6d, 7a, b, 8a-c, 9, 11a-c
Pseudocollinella humida (Haliday) 2c, 6a, b, d, 7a, b 13
Rachispoda lutosa (Stenhammar) 7a, 9, 11c
****Spelobia* (*Eulimosina*) *ochripes*** (Meigen) 7a
S. (*Spelobia*) *clunipes* (Meigen) 3a, b, 11b, c
S. nana (Rondani) 8c, 9, 10, 11e
S. rufilabris (Stenhammar) 4, 7a, 10
****Terrilimosina schmitzi*** (Duda) 7a
Thoracochaeta brachystoma (Stenhammar) 2d, 6c, 13
T. zosterae (Haliday) 2d, 6a-c, 7a, c, 12
Ischiolepta pusilla (Fallén) 6b, 7a

DROSOPHILIDAE
Drosophila andalusiaca Strobl 6a
Scaptomyza (*Parascaptomyza*) *pallida* (Zetterstedt) 1, 3a, b, 4,6a-d, 7a-c, 9,11b, 13
S. (*Scaptomyza*) *graminum* (Fallén) 1, 7a, 11b

DIASTATIDAE
Diastata adusta Meigen 7a, b, 8a, c, 11c, e

EPHYDRIDAE
****Parydra* (*Chaetoapnaea*) *fossarum*** (Haliday) 7a, 8c, 11c
P. pusilla (Meigen) 6d, 8c, d, 11c
P. (*Parydra*) *coarctata* (Fallén) 7a, 8d, 9
Lamproscatella sibilans (Haliday) 2b, d, e, 6d, 7c, 8b, c, 9, 10
Limnellia quadrata (Fallén) 7a, 13
Scatella paludum (Meigen) 2d, e, 6a, c, 13
S. stagnalis (Fallén) 2d, e, 3b, 6a, c, d, 7a, 8a-c, 9, 11a, c, 13
S. subguttata (Meigen) 2d, e, 6a, d, 13
Hydrellia cochleariae Haliday 7b
****H. flaviceps*** (Meigen) 7b, 8a, c, 9, 11a, c, d
H. maura Meigen 2a-c, e, 3a, b, 4, 6c, d, 7a-c, 8a, c, d, 9, 10, 11a-e, 13
H. subalbiceps Collin 8c
Notiphila (*Agrolimna*) *uliginosa* Haliday 11a, c
N. (*Notiphila*) *cinerea* Fallén 4, 6b, d, 7a-c, 8a, c, d, 9, 10, 11a-c, e
Hyadina guttata (Fallén) 7a, 8a, c, 10
Ilythea spilota (Haliday *in* Curtis) 8a, c

HIPPOBOSCIDAE
[*Olfersia spinifera* (Leach *in* Brewster)]

SCATHOPHAGIDAE
Scathophaga calida Haliday *in* Curtis 6d
S. furcata (Say) 7a, b, 8a, 9, 11a-e, 19
S. litorea (Fabricius) 11e, 19
S. stercoraria (Linnaeus) 1, 2a, b-d, 3a, 4, 6c, d, 7a-c, 8a, c, d, 9, 10, 11a-e, 13, 18, 19, 25

ANTHOMYIIDAE

Anthomyia confusanea Michelsen *in* Michelsen and Baéz 1, 2c, 6d, 7b. These records may include female *A.liturata* (Robineau-Desvoidy)

A. liturata (Robineau-Desvoidy) (males) 18

Botanophila brunneilinea (Zetterstedt) 18, 21, 25

Botanophila fugax (Meigen) 2a

B. silvatica (Robineau-Desvoidy) 2c

***B. spinosa* (Rondani) 7b

B. striolata (Fallén) 1, 3b, 7a, 18

***B. verticella* (Zetterstedt) 2a

Fucellia fucorum (Fallén) 1, 2c, 6c, 18, 21, 22

F. maritima (Haliday) 2d, 12a

**F .tergina* (Zetterstedt) 2d, 6a, c, 12a

Hylemyia variata (Fallén) 2c, 3a, 7a, 8a, d, 10, 11b, e, 21

***Lasiomma picipes* (Meigen) 2d, 7a, 8d, 9, 11b, c

***Delia antiqua* (Meigen) 6d, 8d

**D. echinata* (Séguy) 2b, 11b

***D. fabricii* (Holmgren) 2d

**D. florilega* (Zetterstedt) 2a, 6d, 7a-c, 8c, 13

***D. pallipennis* (Zetterstedt) 2a

D. platura (Meigen) 2d, 8a, 11b

D. radicum (Linnaeus) 2c, 6d

Paregle audacula (Harris) 7a

***Subhylemyia longula* (Fallén) 1, 6d, 21

Zaphne ambigua (Fallén) 9, 11c, e

Z. caudata (Zetterstedt) 4, 11a, c, e

Paradelia intersecta (Meigen) 11b

Pegoplata aestiva (Meigen) 2a, b, d, 3a, b, 4, 6d, 7a-c, 8a, c, d, 9, 10, 11a, b, e, 13, 18, 22

P. infirma (Meigen) 2a, 7a, b, 8a, c, d, 9, 10, 11a-c, e, 13, 19, 21

***Pegomya betae* (Curtis) 2a

P. bicolor (Wiedemann) 7a, 9

FANNIIDAE

Fannia fuscula (Fallén) 6d, 11b

F. lepida (Wiedemann) 7b, 8d

F. postica (Stein) 7b ,8a, c, d, 9, 11a, c-e, 22

F. serena (Fallén) 2a, c, 3b, 6d, 7a, b, 8a, c, d, 9, 11a-e, 24

F. subsimilis Ringdahl 8d

MUSCIDAE

Coenosia albicornis Meigen 3b

C. femoralis (Robineau-Desvoidy) 7a

C. intermedia (Fallén) 2a, c, 4, 6d, 7a, b, 8a, d, 10, 11a, b, e, 23, 24

C. lacteipennis (Zetterstedt) 2a, d, 13, 18, 21

C. mollicula (Fallén) 1, 2a-c, 3a, b, 6d, 8d, 10

C. pedella (Fallén) 2a, 3a, b, 6d, 7a, 8c, d, 9, 13, 21

C. pumila (Fallén) 1, 2b, c, 4, 7a, b, 8a, c, 9, 10, 11a-e

C. testacea (Robineau-Desvoidy) 2a-c, e, 6c, d, 7b, c, 13

C. tigrina (Fabricius) 7c

Schoenomyza litorella (Fallén) 6c, 11c, 18

Spilogona falleni Pont 11a, c

S. surda (Zetterstedt) 9, 11a-e, 19, 24

Azelia cilipes (Haliday) 7b

A. triquetra (Wiedemann) 2a, 8c

Drymeia hamata (Fallén) 10, 11d, 19, 21

Thricops longipes (Zetterstedt) Ubiquitous and abundant

Hydrotaea armipes (Fallén) 11b, c

H. irritans (Fallén) 1, 2a, c, 3a, b, 6d, 7a-c, 8a, c, d, 9, 10, 11a-e, 13, 14, 15, 16, 19

Morellia hortorum (Fallén) 2a, c, 7a, 8d, 11b

Neomyia cornicina (Fabricius) 23

Graphomya maculata (Scopoli) 8a, c, 11a

Hebecnema umbratica (Meigen) 2a, 3b,

6d, 7a, b, 8a, c, d, 11b, d, 13
H. vespertina (Fallén) 2a
Mydaea urbana (Meigen) 3b, 19
Myospila meditabunda (Fabricius) 2a, c, 3b, 4, 7a, 8c, 10, 11d, 19, 21
Helina trivittata (Zetterstedt) 6c
**H. calceata* (Rondani) 10, 11 In western isles recorded only otherwise from Barra.
H. evecta (Harris) 2a, c, 6d, 18, 19, 21
H. obscurata (Meigen) 4, 11a, c. ,19
H. protuberans (Zetterstedt) 2a, c, d, 3b
H. quadrum (Fabricius) 2a, c, 3b, 6d, 7a, b, 8d, 10, 11a, b, d, 13, 18, 19
H. reversio (Harris) 3b, 4, 10, 11a, c, e, 23
**H. trivittata* (Zetterstedt) 8a
Phaonia incana (Wiedemann) 2a, c, 3b, 5, 6d, 7a, b, 8a, 9, 10, 11a, d, e, 21, 24
P. perdita (Meigen) 3b

CALLIPHORIDAE
Bellardia viarum (Robineau-Desvoidy) 21
Calliphora vicina Robineau-Desvoidy 2a, 7b, 11b, 12
C. vomitoria (Linnaeus) 7b
Cynomya mortuorum (Linnaeus) Orisgal ruin, one seen.
**Lucilia illustris* (Meigen) 11b

SARCOPHAGIDAE
Sarcophaga (*Myorhina*) *nigriventris* Meigen 6c, d, 18

TACHINIDAE
Prosena siberita (Fabricius) 2a, c, d

Acknowledgements
My main thanks are offered to Mr Peter Wormell for his records from his visit to Tiree in July 2001.

References

Boyd, J.M. and Boyd, I.L. 1990 The Hebrides *The New Naturalist*. Collins, Grafton Street, London
Grimshaw, P.H. 1914-1916. Diptera Scotica: -The Western Isles. *The Scottish Naturalist* 1914 (205-213, 234-236, 258-262), 1915 (276-281), 1916 (115-119, 134-138).
Haswell-Smith, H. 2001 The Scottish Islands. A comprehensive guide to every Scottish island. Cannongate Books Ltd., 14 High Street, Edinburgh
Skidmore, P. (in preparation) A summary of the Diptera of the Western Isles of Scotland. *Dipterists Digest* (*Second Series*).

Dipterists Digest 2008 **15**, 66-72

A provisional list of the Diptera of Kerrera, Western Isles, Scotland

P. SKIDMORE
27 Yew Tree Road, Elkesley, near Retford, Nottinghamshire, DN22 8AY

Summary
From a single day visit to the island of Kerrera, for which Diptera have not previously been recorded, 212 species of Diptera were determined. Six species are new records for the Western Isles: *Hybos grossipes* (Hybotidae), *Anepsiomyia flaviventris*, *Chrysotimus flaviventris*, *Xanthochlorus tenellus* (Dolichopodidae), *Peplomyza litura* (Lauxaniidae) and *Phytoliriomyza hilarella* (Agromyzidae).

Introduction

Kerrera occupies some 1214ha (3000 acres), rising to an altitude of 189m (620ft) on Carn Breugach above Little Horseshoe Bay. It is essentially a long rugged ridge running south-west to north-east, mostly composed of secondary basalt, graphite schists and red sandstone, supporting rough pasture and moorland but with some mid-20th century afforestation areas and stands of older alder *Alnus*, ash *Fraxinus*, birch *Betula*, oak *Quercus*, sycamore *Acer pseudoplatanus*, wych elm *Ulmus glabra*, etc., especially along the sheltered east coast, bordering the Sound of Kerrera. There are also springs, streams and herb-rich flushes.

Kerrera is one of the potentially rich inner Ebudean islands, enjoying very easy access from the port of Oban, but to the best of my knowledge no dipterist had previously visited the island.

Methods

With a free day in Oban on 30 June 1999, the opportunity was taken for a brief collecting visit to Kerrera. The weather was fair and an interesting range of species was taken. During the short time available it was only possible to take sweep-net samples along, or close to, the public track from Gylen Park to Slaterich.

Summary of sampling sites

For identification of these sites, the reader is referred to the appropriate Ordnance Survey map (Sheet 49).

1. Gylen Bay NM816269, a few specimens collected from the stony beach.

2. Gylen Park NM816269 marshy slope above same beach, dominated largely by *Juncus ?articulatus* with *Oenanthe crocata* and *Iris pseudacorus* along the stream, *Urtica dioica* on lower margins and *Ranunculus flammula, Mentha aquatica*, etc. in sward.

3. Gylen Park NM817826(?-9) swept from dense *Pteridium aquilinum* stands with grassy spaces and around rotting *Fraxinus excelsior* stumps and under adjacent oaks.

4. Fort area west of Sgeir Ruadh NM817272 to east of foot of Carn Breugach, swept from under closed canopy *Corylus avellana* on very steep slope by lane with *Stachys sylvatica* in herb layer, *Pteridium aquilinum* on edges and adjacent grassy slopes with *Trifolium repens, Cynosurus cristatus, Galium saxatile, Veronica officinalis, Plantago lanceolata*, etc.

5. Southern end of Horseshoe bay NM824282, under *Fraxinus excelsior, Acer pseudoplatanus* and *Sambucus nigra,* from *Pteridium aquilinum* and *Holcus*, etc.

6. NM824282, same area as 5 but swept from upper edge of stony beach and *Armeria* zone.

7. Horseshoe Bay NM826285 swept from beneath large *Acer pseudoplatanus* where the ground-flora was dominated by *Mercurialis perennis* and *Melandrium rubrum.*

8. Bog below Baliemore farm NM826286, sample swept from *Alnus glutinosa, Salix* species and *Betula pubescens* which appeared to have been planted. Nearby but downstream. towards a chapel were some large *Ulmus glabra* where several *Rhagio scolopaceus* were noted on the trunks.

9. NM827288 swept from grass sward under mature *Fraxinus excelsior* and *Ulmus glabra* along stream mentioned under 8.

10. NM820290 swept from *Iris pseudacorus,* ferns, etc., along roadside drain in lee of a mixed *Acer pseudoplatanus* and conifer shelter belt near Slaterich.

Results

Altogether 212 species of Diptera were recorded during the day's visit, including seven that are determined only to species group. Six species are not known to the author from any other of the Western Isles, namely *Hybos grossipes* (Hybotidae), *Anepsiomyia flaviventris, Chrysotimus flaviventris* and *Xanthochlorus tenellus* (Dolichopodidae), *Peplomyza litura* (Lauxaniidae) and *Phytoliriomyza hilarella* (Agromyzidae). The female *Hydrotaea* (Muscidae) from site 2 agrees better with the characters of the much rarer *H. basdeni*, but it may be an aberrant specimen of the common *H. armipes*, to which it is tentatively referred.

It was interesting to take a specimen of the nationally rare *Tipula luridirostris*, (Tipulidae) otherwise only recorded from Islay in the Western Isles, although the writer has taken it elsewhere in the vicinity of Oban. It is a species of old, damp woodland, of which there are fine fragments on Kerrera.

By the telephone box close to the ferry landing-stage two male *Symphoromyia crassicornis* (Rhagionidae) landed on my hand. Whilst I had encountered this species on many occasions, often in abundance, in hilly parts of Britain I had never before seen it

behaving as a sweat-fly. Certain foreign members of the genus have been reported as blood-feeders, but this was not proven on this occasion.

Species List

An asterisk (*) indicates the six species not previously known from the Western Isles. The numerals against each species refer to the sites listed above and the number and sex of specimens is stated where possible, but where these details are omitted this is due to loss of the data.

TIPULIDAE

Tipula (*Lunatipula*) *lunata* Linnaeus 3.
T. (*Pterelachisus*) *luridirostris* Schummel 8.

LIMONIIDAE

Erioconopa trivialis Meigen) 2, 8.
Erioptera lutea (Meigen) 9.
Gonomyia dentata de Meijere 5 (1m), 10.
Molophilus appendiculatus (Staeger) 3 (4m), 5 (1f), 8, 10.
M. medius de Meijere 4, 8.
M. obscurus (Meigen) 8, 10.
Austrolimnophila ochracea (Meigen) 4 (1m2f), 7, 9.
Phylidorea ferruginea (Meigen) 5.
Dicranomya autumnalis (Staeger) 4 (1m), 10.
Neolimonia dumetorum (Meigen) 4 (1m).
Limonia nubeculosa Meigen 4 (1f).

MYCETOPHILIDAE

Zygomyia humeralis (Wiedemann) 3 (1m)

PTYCHOPTERIDAE

Ptychoptera lacustris Meigen 10.

ANISOPODIDAE

Sylvicola cinctus (Fabricius) 3 (1f), 4 (2m1f), 5 (1f), 7.

SCATOPSIDAE

Thripomorpha bifida (Zilahi-Sebess) 2 (6m).

CERATOPOGONIDAE

Serromyia morio (Fabricius) 5 (1f), 4, 8 (1f), 8 (1f), 6 (1f), 10 (1f).
Stilobezzia lutacea Edwards 4 (1f), 5 (1f).
S. ochracea (Winnertz) 3 (1f), 4 (1f), 10 (1f).
Bezzia nigritula (Zetterstedt) 10 (1f).
B. ?ornata (Meigen) 4 (2m), 5 (1f).
Palpomyia distincta (Haliday) 4 (3f), 5 (1f), 10 (1f).
P. nigripes (Meigen) 10 (1f).
P. praeusta (Loew) 4 (1f), 5 (3f), 6 (1f).
P. quadrispinosa Goetghebuer 3 (1f).
P. spinipes (Meigen *in* Panzer) 5 (1f).

RHAGIONIDAE

Chrysopilus cristatus (Fabricius) 2 (2m), 8, 10.
Rhagio lineola Fabricius 3 (1m), 5 (1m).
R. scolopaceus (Linnaeus) 8.
Symphoromyia crassicornis (Panzer) Ferry stage telephone box (2f)

STRATIOMYIIDAE

Beris vallata (Forster) 5 (1m).
Microchrysa cyaneiventris (Zetterstedt) 5 (1f), 8, 10.

HYBOTIDAE

Hybos culiciformis (Fabricius) 3 (2m5f), 4, 9, 10.
H. femoratus (Müller) 8.
**H. grossipes* (Linnaeus) 3 (3m5f).
Ocydromia glabricula (Fallén) 4 (2m2f),

7, 9, 10.
Bicellaria nigra (Meigen) 1 (2m3f), 4 (3f), 5 (63m53f), 8, 9, 10.
B. sulcata (Zetterstedt) 2 (98m57f), 3 (40m26f), 6.
Trichina clavipes Meigen 2 (1m4f), 3 (3f), 4 (1m), 5 (39m39f), 6 (2m1f), 7, 8, 10.
Platypalpus annulipes (Meigen) 3 (2m1f), 4 (2f), 5 (1m), 7 (1f).
P. calceatus (Meigen) 3(2m2f), 4 (4m3f), 6 (1f), 8, 10 (1m2f).
P. candicans (Fallén) 7(2f), 8 (1f), 10(1f).
P. ciliaris (Fallén) 4 (7).
P. exilis (Meigen) 4 (2m9f), 7(1m1f).
P. luteus (Meigen) 4 (1m), 7.
P. minutus (Meigen) 3(1f), 4(1f), 5(1f).
P. notatus (Meigen) 8, 10 (2m1f).
P. pallidiventris (Meigen) 8, 10(1m).
P. parvicauda (Collin) 7 (1m).
P. verralli (Collin) 4 (1f), 8 (1m2f), 10 (1f).
Tachydromia umbrarum Haliday 4 (1m).
Tachypeza nubila (Meigen) 5 (1m).

EMPIDIDAE
Clinocera stagnalis (Haliday) 6 (2f).
Empis (*Empis*) *aestiva* Loew 3 (1m1f).
E. (*E.*) *nigripes* Fabricius 5(1m).
E. (*Kritempis*) *livida* Linnaeus 2 (73f), 3 (2m2f), 5 (3m), 6, 8, 9, 10.
Hilara chorica (Fallén) 2 (9m8f), 5 (5m2f), 6, 8, 9, 10.
H. interstincta (Fallén) 8 (2m).
H. litorea (Fallén) 2 (2m2f), 3 (2m5f), 4 (3m1f), 6 (1m), 7, 8, 9, 10.
H. maura (Fabricius) 5 (1f).
H. nigrohirta Collin 3(1f).
Rhamphomyia (*Holoclera*) *flava* (Fallén) 4 (1m1f).
Chelifera pectinicauda Collin 5 (1f).
Phyllodromia melanocephala Fabricius 3 (6m5f), 4 (49m46f), 5 (1f), 6, 7, 8, 10.

DOLICHOPODIDAE
Chrysotus cilipes Meigen 4 (1m), 8 (4), 9 (2).
C. gramineus (Fallén) 2 (1f), 3 (10m18f), 4 (8m10f), 5 (14m28f), 6, 7, 8 (2), 9, 10.
Dolichopus griseipennis Stannius 5 (1m1f).
D. plumipes (Scopoli) 2 (1m), 8, 9, 10.
D. popularis Wiedemann 3 (1m), 4 (1m), 5 (2m), 8, 10.
D. trivialis Haliday 2 (2m), 3 (1m1f), 5 (5m1f), 8, 9, 10.
D. ungulatus (Linnaeus) 2 (1m1f), 5 (1m), 6, 7, 9, 10.
Gymnopternus aerosus (Fallén) 2 (1f), 3 (1m), 5 (2m2f), 6, 7, 9, 10.
Sybistroma obscurellum (Fallén) 3 (1m1f), 4 (1m1f).
Aphrosylus ferox Haliday *in* Walker 6 (1m).
Liancalus virens (Scopoli) 6 (1m).
Medetera abstrusa Thuneberg 4 (1m), 6 (1f).
Rhaphium caliginosum Meigen 6 (1f).
Sciapus platypterus (Fabricius) 3 (1m), 4 (5m11f), 5 (1m3f), 7, 9 (1m).
**Anepsiomyia flaviventris* (Meigen) 9 (2m).
Campsicnemus curvipes (Fallén) 6 (1m).
C. scambus (Fallén) 6 (1m).
**Chrysotimus flaviventris* 2, 4 (2m2f), 5 (1m), 6 (1f).
Micromorphus species 6 (2), 8 [four species of this genus are known to occur in Britain but their nomenclature has yet to be resolved: David Gibbs *pers. comm.*]
Syntormon pallipes (Fabricius) (including

the dark form) 6.
Sympycnus desoutteri Parent 1 (4m), 2 (9m11f), 3 (21m6f), 4 (9m2f), 5 (57m21f), 6, 7, 8, 9, 10.
**Xanthochlorus tenellus* (Wiedemann) 7 (2m).

OPETIIDAE
Opetia nigra Meigen 4 (1f).

LONCHOPTERIDAE
Lonchoptera bifurcata (Fallén) 6.

SYRPHIDAE
Melanostoma scalare (Fabricius) 5 (1m), 10.
Platycheirus (*Platycheirus*) *angustatus* (Zetterstedt) 5 (1f), 10.
P. (*Pyrophaena*) *rosarum* (Fabricius) 2 (1f).
Episyrphus balteatus (De Geer) 5 (1m1f).
Melanogaster hirtella (Loew) 8, 10.
Pipizella viduata (Linnaeus) 8.
Syritta pipiens (Linnaeus) 8.

PIPUNCULIDAE
Verrallia aucta (Fallén) 6 (1f).

PSILIDAE
Psila buccata (Fallén) 8.
Psila rosae group 5 (1m3f).

PALLOPTERIDAE
Palloptera quinquemaculata (Macquart) 5 (2m1f).

LAUXANIIDAE
Cnemacantha muscaria (Fallén) 6.
Minettia longipennis (Fabricius) 5 (1), 10.
Meiosimyza decipiens (Loew) 10 (1m).
M. rorida (Fallén) 3 (2f), 4 (26), 5 (1f), 7, 9.
M. subfasciata (Zetterstedt) 5 (5m), 7.
**Peplomyza litura* (Meigen) 7.
Sapromyza halidayi Shatalkin 3 (1f).
Tricholauxania praeusta (Fallén) 4 (1f), 7.

CHAMAEMYIIDAE
Chamaemyia aridella (Fallén) 8 (1m).
C. juncorum (Fallén) 3 (1f), 8 (1m2f).

PHAEOMYIIDAE
Pelidnoptera fuscipennis (Meigen) 4 (1f).

SCIOMYZIDAE
Pherbellia scutellaris group 9 (1f).
Tetanocera elata (Fabricius) 10 (1m).

SEPSIDAE
Sepsis cynipsea (Linnaeus) 2 (1m), 3 (1f).
S. orthocnemis Frey 8.
S. punctum (Fabricius) 5 (1m), 8.

CLUSIIDAE
Clusiodes ruficollis (Meigen) 8.

AGROMYZIDAE
Ophiomyia sp. 5 (1m).
Cerodontha denticornis (Panzer) 3 (1m), 5 (1), 6, 8.
Liriomyza flaveola (Fallén) 3 (11f), 4 (7f), 5 (28), 6, 7, 8, 9, 10.
**Phytoliriomyza hilarella* (Zetterstedt) 5 (1m).
Phytomyza ranunculi (Schrank) 3 (2f), 5 (5m1f), 8, 10.

OPOMYZIDAE
Opomyza germinationis (Linnaeus) 4 (3m7f), 8, 9, 10.
O. petrei Mesnil 8.

ANTHOMYZIDAE
Anthomyza gracilis group 2 (1f), 8.
Paranthomyza nitida 3 (2m1f).

Stiphrosoma cingulatum (Haliday) 4 (1f).

CHLOROPIDAE
Chlorops hypostigma Meigen 4 (7f), 5 (6).
Conioscinella frontella (Fallén) 6 (1m).
Elachiptera cornuta (Fallén) 5 (1f).

SPHAEROCERIDAE
Lotophila atra (Meigen) 2 (1m), 5 (1m), 6, 8, 9.
Chaetopodella scutellaris (Haliday) 6.
Leptocera fontinalis (Fallén) 7.
Minilimosina vitripennis (Zetterstedt) 8 (1m).
Pseudocollinella humida (Haliday) 1 (1m), 6.
Thoracochaeta zosterae (Haliday) 1 (2).
Ischiolepta pusilla (Fallén) 8 (1f).

DROSOPHILIDAE
Scaptomyza pallida (Zetterstedt) 6.

EPHYDRIDAE
Parydra coarctata (Fallén) 4.
Lamproscatella sibillans (Haliday) 6, 7.
Scatella stagnalis (Fallén) 1 (3), 2 (4), 6.
S. subguttata (Meigen) 7.
Hydrellia maura Meigen 2 (4f), 3 (13), 5 (30), 6, 8, 9, 10.

SCATHOPHAGIDAE
Leptopa filiformis Zetterstedt 3 (1m).
Scathophaga calida Haliday *in* Curtis 8.
S. furcata (Say) 2 (1m), 8, 9, 10.
S. inquinata Meigen 10.
S. litorea (Fallén) 2 (13m), 5 (2m).
S. stercoraria (Linnaeus) 1 (1f), 2 (1m8f), 3 (1f), 7, 8, 9, 10.
S. suilla (Fabricius) 5 (1m), 8, 9, 10.

ANTHOMYIIDAE
Botanophila sericea (Malloch) 3 (1m).
Hylemya nigrimana (Meigen) 3 (1m), 7, 9 (1m), 10 (1m).
H. vagans (Panzer) 3 (1f), 5 (3f), 7, 8 (1m), 9, 10.
H. variata (Fallén) 2 (1m3f), 3 (7m8f), 4 (1m), 5 (1m4f), 8, 9, 10.
Chirosia albitarsis (Zetterstedt) 10 (1f).
C. flavipennis (Fallén) 3 (1f).
Lasiomma picipes (Meigen) 10 (2m).
L. seminitidum (Zetterstedt) 5 (1f), 10 (1f).
Delia platura (Meigen) 8.
Pegoplata aestiva (Meigen) 2 (13m9f), 4 (1m), 5 (20m55f), 6, 7, 8, 9, 10.
P. infirma (Meigen) 1 (1f), 2 (1m8f), 3 (6m15f), 4 (1m), 5 (34m35f), 6 (5m1f), 7, 8, 9, 10.
Paradelia intersecta (Meigen) 5 (1m), 9, 10 (1m).
Pegomya vittigera (Zetterstedt) 4 (1f).

FANNIIDAE
Fannia fuscula (Fallén) 5 (1f), 8, 10 (1m).
F. genualis (Stein) 2, 8 (2f), 10 (2m).
F. lepida (Wiedemann) 7 (1f), 10 (3m).
F. manicata (Meigen) 8 (1f).
F. parva (Stein) 2 (1f), 4 (2f), 5 (1m4f).
F. postica (Stein) 2 (1m1f), 5 (2m), 10 (1m)
F. rondanii (Strobl) 4 (1f), 5 (1m18f), 6 (1f), 8, 10 (2m).
F. serena (Fallén) 5 (7m1f).
F. similis (Stein) 5 (2m1f), 10 (1m).
F. umbrosa (Stein) 5 (5f), 8, 10.

MUSCIDAE
Coenosia intermedia (Fallén) 3 (1m1f), 4 (3f), 8 (1f), 9, 10 (1m).
C. albicornis Meigen 5 (6m3f), 8 (2m2f), 9 (4f), 10 (1m).
C. means Meigen 10 (1f).
C. mollicula (Fallén) 3 (4m11f), 4 (9m5f), 5 (8m19f), 8, 9, 10.

C. pedella (Fallén) 3 (1f).
Macrorchis meditata (Fallén) 8, 10 (1m1f).
Pseudocoenosia abnormis Stein 8 (1m).
P. solitaria (Zetterstedt) 8 (1f).
Schoenomyza litorella (Fallén) 2 (1m), 6.
Spilogona denigrata (Meigen) 10 (1m).
S. pacifica (Meigen) 8 (1m1f).
Azelia nebulosa Robineau-Desvoidy 3 (1f), 5 (1f).
A. triquetra (Wiedemann) 3 (1f), 5 (1f), 10 (1f).
Hydrotaea armipes (Fallén) 2 (?1f), 10 (1m).
H. dentipes (Fabricius) 8 (1f).
H. ignava (Harris) 10 (1m).
H. irritans (Fallén) 3 (2m3f), 5 (11m3f), 8, 9, 10 (1f).
Thricops semicinereus (Wiedemann) 4 (1m2f), 6, 7.
Neomyia cornicina (Fabricius) 8 (1m).
Hebecnema nigra (Robineau-Desvoidy) 2 (1m1f), 5 (1m).
H. umbratica (Meigen) 2 (1f), 8 (1m), 10 (1m).
H. vespertina (Fallén) 5 (1m1f), 8 (1f), 10 (1f).
Myospila meditabunda (Fabricius) 3 (1m2f), 8.
Helina depuncta (Fallén) 3 (1m), 4 (2m).
H. impuncta (Fallén) 8, 9.
H. evecta (Harris) 3 (1m), 5 (1f), 8 (1m2f), 10 (1m).
H. reversio (Harris) 3 (1f), 9 (1f).
H. quadrum (Fabricius) 8 (3m), 9 (1f).
Lophosceles cinereiventris (Zetterstedt) 2 (1f), 5 (1m2f), 9 (1m), 10 (1m1f).
L. mutatus (Fallén) 10 (1m).
Phaonia incana (Wiedemann) 2 (2m1f), 8.
P. tuguriorum (Scopoli) 6, 8.

CALLIPHORIDAE
Bellardia viarum (Robineau-Desvoidy) 8.
Calliphora vicina Robineau-Desvoidy 8.
Lucilia caesar (Linnaeus) 9.
Melanomya nana (Meigen) 2 (1f), 6.
Pollenia rudis (Fabricius) 8 (1f).

TACHINIDAE
Siphona geniculata (De Geer) 5 (1m).
Thelaira nigrina (Fallén) 10 (1m).

Dipterists Digest 2008 **15**, 73-94

Notes on Ceratopogonidae (Diptera) including some new national records for Britain and Ireland

P.J. CHANDLER, P. ASHE* and J.P. O'CONNOR†
606B Berryfield Lane, Melksham, Wilts SN12 6EL, U.K.
*33 Shelton Drive, Terenure, Dublin 12, Ireland
†National Museum of Ireland, Kildare Street, Dublin 2, Ireland

Summary
Two species of Ceratopogonidae are added to both the British and Irish lists: *Bezzia* (*Bezzia*) *kazlauskasi* Remm, 1966 and *Dasyhelea turficola* Kieffer, 1925. *Dasyhelea flavoscutellata* (Zetterstedt, 1850) is deleted from both the British and Irish lists, as it was a misidentification of *D. turficola*. *Bezzia pygmaea* Goetghebuer, 1920 requires confirmation as a British species. Eleven other species of Ceratopogonidae are added to the British list and twelve other species are added to the Irish list.

Introduction

While curating the collection of Ceratopogonidae held by the National Museums of Scotland at Edinburgh (NMS), a number of interesting records and several species new to the British or Irish fauna were detected by PJC. Some of these are discussed here and material from other collections has been taken into account where available, particularly PJC's private collection and that of the Natural History Museum, London (BMNH).

This family has been neglected by British dipterists, the only attempt at a comprehensive coverage having been by Edwards (1926, 1929) and more recent work has mainly concentrated on the vertebrate biting species of the genus *Culicoides* Latreille. A modern key to the genera of British Ceratopogonidae was, however, provided by Boorman and Rowland (1988), in which the sexes were keyed separately in recognition of the pronounced sexual dimorphism in many genera. John Boorman has also made available his unpublished notes and figures relating to the British species of all genera, from which the preliminary nature of our knowledge of most genera is evident.

The collections of Ceratopogonidae at Edinburgh were mainly assembled by the late Ted Pelham-Clinton, when he was based there. His interest in this group was evidently initiated by his earlier studies at Edinburgh University of the biting midges, resulting in keys to the British species of the genus *Culicoides* (Campbell and Pelham-Clinton 1960). He studied other genera to varying extents and least studied by him, presumably because of difficulty of identification, was the genus *Dasyhelea* Kieffer. Material of this genus was sparse but nevertheless included several additions to the British Isles faunal list. Some additions in other genera, *Brachypogon* Kieffer, *Bezzia* Kieffer and *Forcipomyia* Meigen are also reported here.

The Irish fauna of this family is even more poorly known than that of Britain and the list of Irish Ceratopogonidae hitherto stood at 51 species (Ashe *et al.* 1998; Chandler 1998; Ashe and O'Connor 2002; Ashe *et al.* 2002; Ashe *et al.* 2007; Alexander and Chandler in

press) and two requiring confirmation; this number combined with the 13 additional species recorded here brings the total confirmed Irish ceratopogonid fauna to 64 species. Voucher specimens of most of the species recorded as new to Ireland here have been lodged in the National Museum of Ireland, Dublin (NMI). Abbreviations: ECPC = E.C. Pelham-Clinton; JPOC = J.P. O'Connor; PA = P. Ashe; PJC = P.J. Chandler; REB =R.E. Blackith; RMB = R. M. Blackith. The specimens were identified by the senior author unless otherwise stated.

Genera and species are dealt with here in the order of Chandler (1998).

CERATOPOGONINAE – Tribe Ceratopogonini

Brachypogon Kieffer, 1899

Only the subgenus *Isohelea* Kieffer, 1917 is represented in the British Isles, with three species previously recorded. Edwards (1926), who placed *Isohelea* as a subgenus of *Ceratopogon*, figured the male genitalia of these three species. Szadziewski and Hagan (2000) described a new species closely related to *B. nitidulus* (Edwards, 1921) from Norway. The series under *B. nitidulus* at NMS was found to include both species, with *B. norvegicus* predominant. Three other species that had been confused with *B. perpusillus* are recorded from the small material available. Two of these were determined from the revision of the Polish species of *Isohelea* by Szadziewski *et al.* (1994); the third was not included in that work and its identity is less certain but it is considered most likely to be *B. hyperboreus* Clastrier.

These tiny black midges with whitish wings are rarely recorded and further study of the British fauna is evidently necessary. Both sexes feed at flowers and females prey on chironomids larger than themselves but there are few observations of this (Edwards 1933; Downes 1978). The genus *Brachypogon* has yet to be recorded in Ireland.

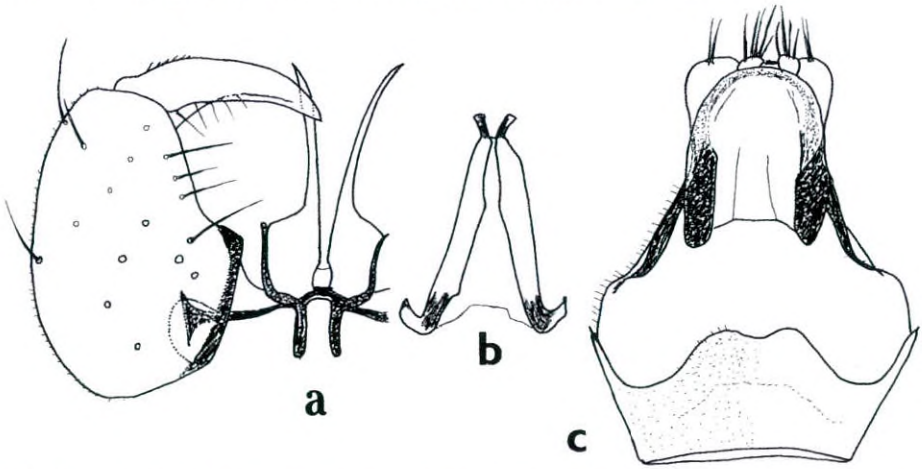


Fig. 1. ***Brachypogon bialoviesicus*** **Krzywiński, male genitalia, ventral view: a, gonocoxite, gonostylus and parameres; b, aedeagus; c, sternite and tergite 9 with hypoproct.**

Brachypogon* (*Isohelea*) *bialoviesicus Krzywiński in Szadziewski, Kaczorowska & Krzywiński, 1994 (Fig. 1)
New to Britain.
Material. **SCOTLAND:** INVERNESS-SHIRE: Kincraig, 27.v.1957, at MV light, 1♂, ECPC, NMS.
Remarks. This species was described from Poland and has since been recorded from Norway (Szadziewski and Borkent 2004). The male genitalia including the aedeagus are similar to *B. perpusillus* but in the latter species the parameres are much stouter with short broad distal portions.

Brachypogon* (*Isohelea*) *carpaticus Szadziewski in Szadziewski, Kaczorowska & Krzywiński, 1994 (Fig. 2)
New to Britain.
Material. **SCOTLAND:** ARGYLLSHIRE: Lephinmore, 11.viii.1951, 2♂, ECPC, NMS.

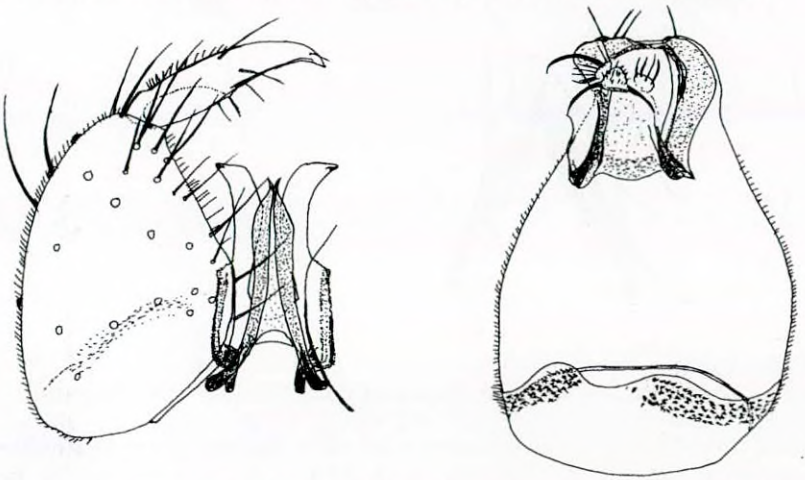


Fig. 2. *Brachypogon carpaticus* Szadziewski, male genitalia, ventral view: left, gonocoxite, gonostylus, parameres and aedeagus; right, sternite and tergite 9 with hypoproct.

Remarks. This was described from a single male found at umbelliferous flowers in the Carpathian Mountains of Poland. The aedeagus is similar to *B. perpusillus* but the parameres differ in the distal part being broad apically and shortly pointed externally. Szadziewski *et al.* (1994) noted that it bore some resemblance to *B. aquilonalis* Clastrier described from Finland (Clastrier 1961) and not since recorded elsewhere, but that apparently had an aedeagus resembling the parameres of *B. carpaticus* and had several bristles on the apicolateral lobes of

tergite 9 while only one was present on each lobe in *B. carpaticus*. The specimen figured here has two additional bristles on one lobe but only one is present on each lobe of the other.

Brachypogon (Isohelea) hyperboreus Clastrier, 1961 (Fig. 3)
New to Britain.
Material. **SCOTLAND:** INVERNESS-SHIRE: Corrimony RSPB Reserve NH3729, 28.v.2002, 1♂, PJC.

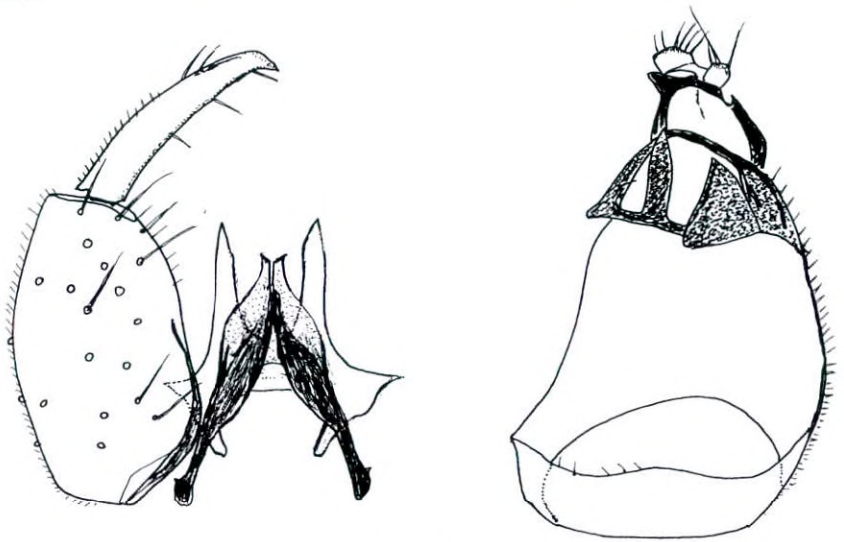


Fig. 3. ***Brachypogon hyperboreus*** **Clastrier, male genitalia, ventral view: left, gonocoxite, gonostylus, parameres and aedeagus; right, sternite and tergite 9 with hypoproct.**

Remarks. This species resembles *B. perpusillus* and *B. bialoviesicus* in the structure of the aedeagus and is closer to *B. perpusillus* in the form of the parameres but has the distal portions more tapered and the basal part produced laterally. It is tentatively identified as *B. hyperboreus*, described from Norway and Finland (Clastrier 1961), but that species was figured as having the aedeagus with the medial part more expanded laterally and distinctly angular where it is contracted to the narrow apical part.

Brachypogon (Isohelea) nitidulus (Edwards, 1921) (Fig. 4a)
Material. **SCOTLAND** (11♂, ECPC, NMS)**:** INVERNESS-SHIRE: Drimsaille, 9.x.1955. ARGYLLSHIRE: Lephinmore, 12.vi.1951. PEEBLES: Drumelzier, 4.vi.1948. **ENGLAND:** SURREY: Pirbright, 28.v.1968, 1♂ on tree trunk, J. Boorman, BMNH.
Remarks. *Brachypogon nitidulus* can be distinguished from *B. norvegicus* only by characters of the male genitalia, which were figured for both by Szadziewski and Hagan (2000). In *B.*

norvegicus the parameres are stout, heavily sclerotised and broadly fused medially, while in *B. nitidulus* they are weakly sclerotised and connected by a transparent membrane. The cerci are short and small in *B. norvegicus* but larger and more elongate in *B. nitidulus*. The females are not separable, both having a single spermatheca while most other species of subgenus *Isohelea* including *B. sociabilis* and *B. bialoviesicus* have two spermathecae.

The Lephinmore example of *B. nitidulus* was swept from *Scirpus palustris*. Both species were also collected by light traps.

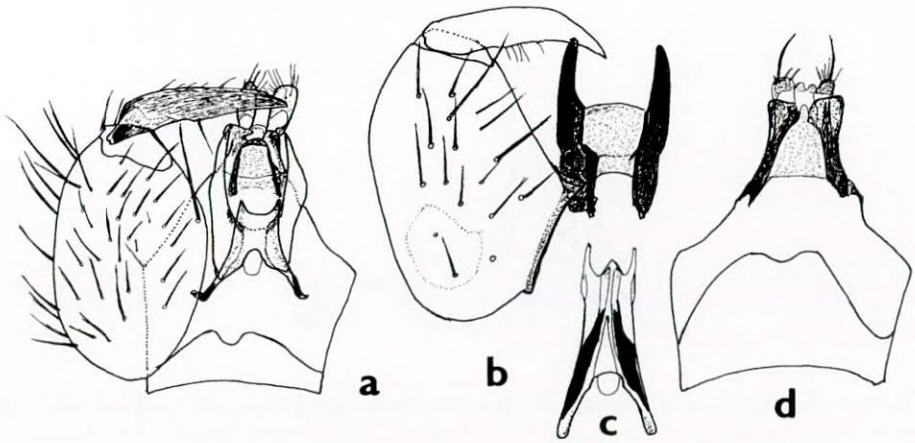


Fig. 4. ***Brachypogon*** **species, male genitalia, ventral view: a,** ***B. nitidulus*** **(Edwards); b-d,** ***B. norvegicus*** **Szadziewski & Hagan: b, gonocoxite, gonostylus and parameres; c, aedeagus; d, sternite and tergite 9 with hypoproct.**

Brachypogon **(*Isohelea*)** ***norvegicus*** Szadziewski & Hagan, 2000 (Figs 4b-d)
New to Britain.
Material. **SCOTLAND** (24♂, ECPC, NMS): SUTHERLAND: Inchnadamph. INVERNESS-SHIRE: Drimsaille. ARGYLLSHIRE: Lephinmore; St Catherine's. PERTHSHIRE: Rannoch, Tyndrum, Ardnamurchan. MIDLOTHIAN: Miltonbridge. BERWICKSHIRE: Cockburnspath. (7♂, PJC) SUTHERLAND: The Mound. INVERNESS-SHIRE: Corrimony. PERTHSHIRE: Crianlarich. **ENGLAND:** CUMBRIA: Cold Pike, 2500', 27.vi.1952, 2♂, N.L. Birkett, NMS.
Remarks. Distinguishing characters are given under *B. nitidulus*. The material of *B. norvegicus* was collected from May to July. Males were observed swarming at Lephinmore on 12.vi.1951 and the Tyndrum example was swept from sallow *Salix*. Since being described from Norway this species has only been recorded from Poland (Scadziewski 2007).

Brachypogon **(*Isohelea*)** ***perpusillus*** (Edwards, 1921) (Fig. 5)

Material. **SCOTLAND** (10♂, ECPC, NMS): ARGYLLSHIRE: Lephinmore, Lochawe, St Catherine's. BERWICKSHIRE: Cockburnspath. **ENGLAND:** Hampshire: Brockenhurst, 8.v.1952, 1♂, ECPC, NMS.

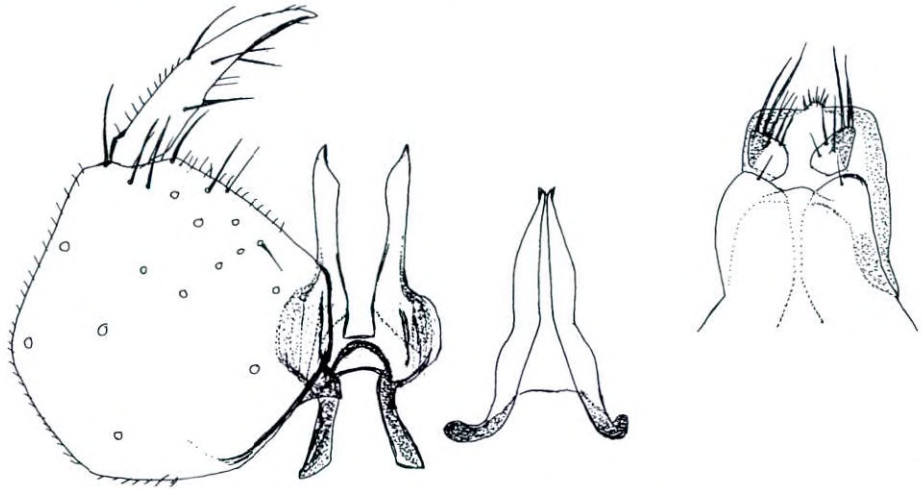


Fig. 5. ***Brachypogon perpusillus*** **(Edwards), male genitalia: left, ventral view of gonocoxite, gonostylus and parameres; central, aedeagus; right, dorsal view of apex of tergite 9 with hypoproct.**

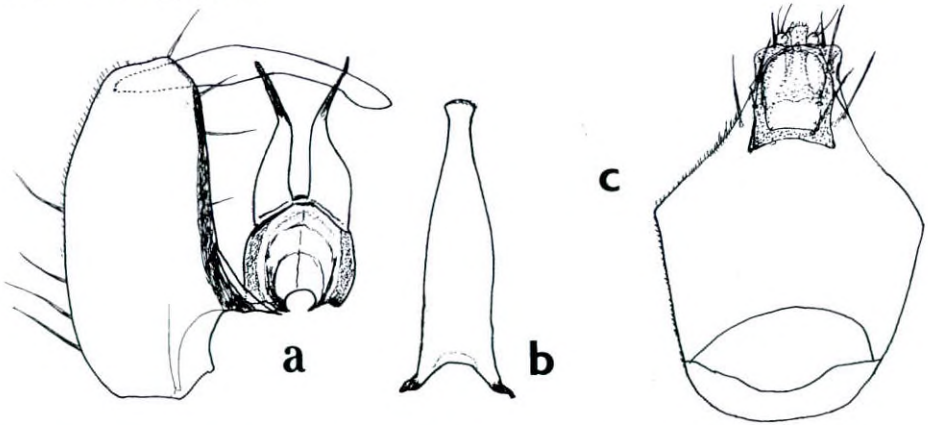


Fig. 6. ***Brachypogon sociabilis*** **(Goetghebuer), male genitalia, ventral view: a, gonocoxite, gonostylus and parameres; b, aedeagus; c, sternite and tergite 9 with hypoproct.**

Remarks. This species was taken by ECPC at MV light and he observed males swarming at Lephinmore on 2.vi.1951. It differs from other British species in having the veins forming the radial cells slightly darkened. The holotype of this species was described and figured by Szadziewski *et al.* (1994). It is otherwise recorded from the Czech Republic, Denmark, France, Germany and Norway (Szadziewski and Borkent 2004).

Brachypogon (Isohelea) sociabilis (Goetghebuer, 1920) (Fig. 6)
Material. **SCOTLAND** (33♂, ECPC, NMS)**:** INVERNESS-SHIRE: Aviemore, Kincraig. ARGYLLSHIRE: Lephinmore, Port Appin, St Catherine's. PERTHSHIRE: Tyndrum. MIDLOTHIAN: Miltonbridge, Ederline. WESTERN ISLES: Barra.
Remarks. This species was taken at MV light at Kincraig and was reared by ECPC from saline mud at Port Appin, emerged 27.ii.1956.

Ceratopogon Meigen, 1803
In the revision of this genus by Borkent and Grogan (1995) five species were recognised as occurring in Britain, but some difficulty was experienced in determining one of these species using that work, as discussed below.

Ceratopogon grandiforceps (Kieffer, 1913)
New to Ireland.
Material. **IRELAND:** DONEGAL: Lough Eske, v.1995, 4♂ at light, P. Rawlings, BMNH; WICKLOW**:** Blackditch Wood O3103, 20.v-3.vi.1990, 1♂, REB/RMB.
Remarks. This species is widespread in western Europe (Szadziewski and Borkent 2004).

Ceratopogon lacteipennis Zetterstedt, 1838 (Fig. 7)
New to Ireland.
Material. **SCOTLAND:** DUNBARTONSHIRE: Bonhill, 4.v.1907, 1♂, J.R. Malloch, NMS. PERTHSHIRE: Ben Ledi, 5.vii.1961, 9♂, ECPC, NMS**. IRELAND:** WICKLOW: Wicklow Gap O00, 23.vi.1975, 1♂, PJC.
Remarks. These specimens run to *C. lacteipennis* in the key to Palaearctic males provided by Borkent and Grogan (*op. cit.*) and have been determined as *C. lacteipennis* by Ryszard Szadziewski. However, they differ from the figures given by Borkent and Grogan in the form of the parameres, which are more elongate than depicted with an angle near the basal third of their inner margin rather than in the middle. Examination of slides determined by them at BMNH indicates that all have the parameres *in situ* behind the aedeagus, which may account for this discrepancy. The figure by Remm (1974b) also has the parameres *in situ* but does show that they are slender.

Ceratopogon lacteipennis is distinguished from other British species of the genus except for *C. communis* Meigen by having the apicolateral processes of male tergite 9 broad and truncated, with a single seta. The completely transparent whitish wing separates it from *C. communis*, which has some infuscation and the anterior veins more distinct. It also differs from *C. communis* in having the medial prongs of the aedeagus more elongate and the lateral

prongs serrate apically; also in *C. communis* the parameres are more elongate and extend well beyond the tip of the aedeagus *in situ*.

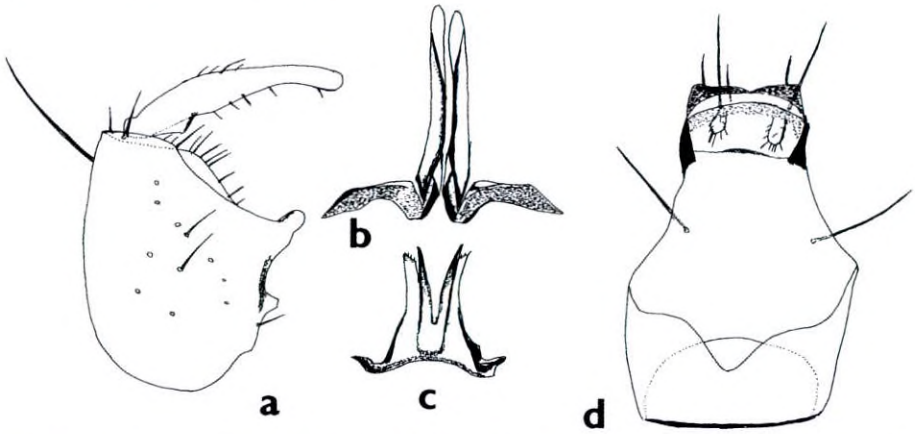


Fig. 7. ***Ceratopogon lacteipennis*** **Zetterstedt, male genitalia, ventral view: a, gonocoxite, and gonostylus; b, parameres; c, aedeagus; d, sternite and tergite 9 with hypoproct.**

Serromyia atra (Meigen, 1818)
New to Ireland.
Material. **IRELAND:** WESTMEATH: Lough Ballynafid N4161, 28.vi.1987, 1♂, 1♀, PJC; Lough Patrick N46, 16.vi.1985, 1♂, PJC.
Remarks. This resembles *S. morio* (Fabricius, 1775) but males can be recognised by having only a single (ventral) row of strong bristles on the fore femur and females have two short equal claws on the hind tarsus while other British Isles species of *Serromyia* have a single long claw.

CERATOPOGONINAE - Tribe Culicoidini
Culicoides* (*Beltranmyia*) *salinarius Kieffer, 1914
New to Ireland.
Material. **IRELAND:** WEXFORD: 1.ix.1980, Carnsore Point T1203, 1♀, JPOC.
Remarks. This species is found mostly in coastal areas, especially in saline habitats and saltmarshes, but also inland, throughout Europe to Estonia, Finland and Russia; also Algeria (Boorman 2008). Dzhafarov (1964) recorded this species as attacking humans from April until November.

CERATOPOGONINAE - Tribe Palpomyiini
Bezzia* (*Bezzia*) *kazlauskasi Remm, 1966
New to Britain and Ireland.

Material. **SCOTLAND:** ARGYLLSHIRE: Port Appin, 22.vi.1952, 1♂, ECPC; Lephinmore, 12.vi.1951, 1♀, ECPC; GALLOWAY: Hart Moss, 2.vii.1979, 1♀, PJC. **ENGLAND: CUMBRIA:** Blelham Bog NNR NY3600, 17.vi.1999, 1♀, PJC; DURHAM: Middleton-in-Teesdale, 21.vi.1981, 1♀, PJC; Bowlees Beck, 24.vi.1983, 1♂, PJC; NORFOLK: Thompson Common, 1.vi.1985, 1♀, PJC; HAMPSHIRE: Greywell Fen, 3.vii.1991, 1♀, PJC; CORNWALL: Redlake Cottage meadows, 12.vii.2000, 1♀, PJC. **IRELAND:** WESTMEATH: woodland edge near Lough Coura N45, 27.vi.1987, 1♀, PJC.

Remarks. In the key by Remm (1974a) *B. kazlauskasi* runs to a couplet also including *B. pygmaea* Goetghebuer, 1920 as the body is mainly black with greyish thoracic markings including two thin dorsal stripes, the front femur without spines, the fore and mid femora and tibiae yellowish with a dark ring and the hind femur entirely black; the hind tibia is mainly black except for a narrow yellow base but may have a more or less obscure yellow preapical band. It agrees with the characters given for *B. pygmaea* by Edwards (1926) so could have been confused with that species. It is larger (wing 1.7-2.4mm) than *B. pygmaea* (wing 1.45-1.75, Remm 1974a) and the male genitalia differ in having a broad apically rounded aedeagus, while *B. pygmaea* has the aedeagus slender for most of its length. Apart from the absence of femoral spines it closely resembles the following species *B. signata*. *Bezzia kazlauskasi* is only previously known from a few European countries including Estonia, Germany, Lithuania and Poland (Szadziewski and Borkent 2004). It is evidently widespread in the British Isles.

Bezzia* (*Bezzia*) *signata (Meigen, 1804)

New to Britain.

Material. **SCOTLAND:** EASTER ROSS: Udale Bay, 29.v.2002, 1♀, PJC; ABERDEENSHIRE: Morrone Birkwood, 14.vii.1971, 1♀, PJC; PERTHSHIRE: Inchture, 1955, 1♂, ECPC, NMS; ARGYLLSHIRE: Lephinmore, 26.v.1952, 5♀, ECPC, NMS. **ENGLAND:** HERTFORDSHIRE: Radwell, vi.1918, 1♂, F.W. Edwards, BMNH;

Remarks. *Bezzia signata* is listed from Britain by Szadziewski and Borkent (2004) based on its inclusion in earlier British lists, although it was italicised as requiring confirmation by Verrall (1901) and was not mentioned by Edwards (1926). It is widespread in the Palaearctic (Szadziewski and Borkent 2004). It is similar in coloration to *B. kazlauskasi* and *B. pygmaea* but differs in having 1 or 2 spines below the fore femur, situated adjacent to the dark ring. It is similar in size (wing 1.8-2.5mm) to *B. kazlauskasi*. Like these species it is distinguished from the common *B. ornata* (Meigen, 1830), which also has the femoral spines, by the coloration of the hind femur of which only the apical third is black in *B. ornata*. The male aedeagus is closer to that of *B. pygmaea* but not so narrow and the fused parameres are narrower basally. Edwards (1926) recorded *B. pygmaea* only from Radwell, Hertfordshire; the male specimen from this locality was found to be *B. signata* without the femoral spines apparent.

The Argyllshire material was taken at MV light and it was reared from saltmarsh mud at Inchture by ECPC.

Bezzia* (*Homobezzia*) *annulipes (Meigen, 1830)

New to Ireland.

Material. **IRELAND:** CAVAN: Virginia Woods N5987, 21.vii.2006, 3♀, PJC; WICKLOW: near Carrigower O2508, birch scrub, 26.iv.1984, 1♂, PJC; KILDARE: Newbridge Fen N7615, 27.v.1984, 1♂, 1♀, PJC.

Remarks. *Bezzia annulipes* is a Holarctic species that is common and widespread in Europe (Szadziewski and Borkent 2004). This and *B. solstitialis* (Winnertz) may be determined from the key by Wirth *et al.* (1984).

Bezzia* (*Homobezzia*) *leucogaster (Zetterstedt, 1850)

New to Ireland.

Material. **IRELAND:** KILDARE: Newbridge Fen N7615, 27.v.1984, 1♀, PJC.

Remarks. *Bezzia leucogaster* is widespread in Europe and also found in the East Palaearctic and Near East (Szadziewski and Borkent 2004).

Bezzia* (*Homobezzia*) *solstitialis (Winnertz, 1852)

New to Ireland.

Material. **IRELAND:** MAYO: by the Erriff River M06, 14.vi.1985, 1♀, PJC; KILDARE: Newbridge Fen N7615, 27.v.1984, 1♂, PJC; TIPPERARY: mixed woods on Marl Bog, near Dundrum R9544, 22.vi.1975, 2♀, PJC.

Remarks. This is a Holarctic species that is widespread in Europe (Szadziewski and Borkent 2004). In the British checklist (Chandler 1998) the name *B. circumdata* (Staeger, 1839) was used for it following the Czech and Slovak list of the previous year but *B. solstitialis* is the name considered valid by Szadziewski and Borkent (2004) and was used in the revised Czech and Slovak checklist by Tóthová and Knoz (2006).

Palpomyia lineata (Meigen, 1804)

New to Ireland.

Material. **IRELAND:** KILDARE: hedge at edge of Newbridge Fen N7615, 27.v.1984, 2♀, PJC; LAOIS: near Annaghmore Lough N31, 26.vi.1987, 1♀, PJC.

Remarks. This is a Holarctic species and it is widespread in Europe (Szadziewski and Borkent 2004).

Palpomyia luteifemorata Edwards, 1926

New to Ireland.

Material. **IRELAND:** MEATH: wooded bank by the River Boyne, near Hays O97, 16.vii.1971, 1♀, PJC.

Remarks. This species was originally described from Cambridge (Great Britain) but is also known from Belgium, Germany, Sweden, Estonia and the Ukraine (Szadziewski and Borkent 2004).

Palpomyia praeusta (Loew, 1869)

New to Ireland.

Material. **IRELAND:** WICKLOW: by shaded stream at Powerscourt O11, 10.vii.1971, 1♀, PJC.

Remarks. *Palpomyia praeusta* is widespread in Europe and also recorded from the Caucasus (Remm 1988, Szadziewski and Borkent 2004).

Palpomyia serripes (Meigen, 1818)
New to Ireland.
Material. **IRELAND:** LOUTH: alder marsh at Ballymascanlon J01, 29.vi.1975, 1♀, PJC; TIPPERARY: mixed woods on Marl Bog, near Dundrum R9544, 22.vi.1975, 1♀, PJC; WESTMEATH: open shore at Lough Patrick N46, 16.vi.1985, 1♀, PJC; woodland edge near Lough Coura N45 27.vi.1987, 1♀, PJC; Glen Lough N2866, 28.vi.1987, 1♀, PJC; KERRY: Kenmare, 30.v.1962, 1♀, ECPC, NMS.
Remarks. This species is widespread in the Palaearctic, including North Africa (Szadziewski and Borkent 2004).

Palpomyia tinctipennis Kieffer, 1919
= *Palpomyia semifumosa* Goetghebuer, 1922
New to Ireland. This synonymy has been established by Dominiak and Szadziewski (in press).
Material. **IRELAND:** TIPPERARY: wooded marsh at Cregg S42, 21.vi.1975, 1♀, PJC; edge of dense wood at Ahenny S42, 21.vi.1975, 1♀, PJC; mixed woods on Marl Bog, near Dundrum R9544, 22.vi.1975, 1♀, PJC; WATERFORD: woodland edge at Coolnamuck S3521, 1♀, 21.vi.1975, PJC; WICKLOW: Knocksink Wood O2117, 17.vi.1985, 1♀, PJC.
Remarks. This species is frequent in Britain. It is also known from Belgium, the Netherlands, Denmark, Sweden and the Near East (Szadziewski and Borkent 2004).

DASYHELEINAE
Dasyhelea Kieffer. 1911
Five subgenera are recognised and members of each of these are dealt with here. In the checklist (Chandler 1998) *D. acuminata* Kieffer, 1919 was listed in error under subgenus *Dicryptoscena* Enderlein but belongs correctly to subgenus *Sebessia* Remm. The reason for this error was that this species was previously on the British list under the name *D. polita* Edwards, 1921 placed in synonymy with it by Szadziewski (1986) and *D. polita* was included in *Dicryptoscena* in the Palaearctic Catalogue (Remm 1988).

Within subgenera very few characters other than in the male genitalia are useful in recognising species. The coloration of the scutellum (either dark or yellow in contrast to the rest of the body) has been used by some authors but this is highly variable and has no diagnostic value (Ryszard Szadziewski *pers. comm.*).

Subgenus ***Dasyhelea*** sensu stricto
Dasyhelea bensoni Edwards, 1933
Edwards described *D. bensoni* from Glen Lochay, Perthshire. A slide of the genitalia of this species was found at NMS although no associated specimen was present in the collection.
Material. **SCOTLAND:** PEEBLES: Drumelzier, 11.vi.1948, 1♂, ECPC, NMS.

Subgenus ***Dicryptoscena*** Enderlein, 1936

Two species have previously been recorded from Britain, *D. modesta* (Winnertz, 1852) and *D. notata* Goetghebuer, 1920. A third species, *D. acuminata* Kieffer, 1914 was listed by Chandler (1998) but this should be correctly placed in subgenus *Sebessia* (J. Boorman *pers. comm.*). Two further species of *Dicryptoscena* are added here, but one of them may correctly belong to *Dasyhelea* sensu stricto.

Dasyhelea* (*Dicryptoscena*) *modesta (Winnertz, 1852) (Fig. 8)

This is a common species in Britain. Its male genitalia are figured here as existing figures (Remm 1962b, Szadziewski 1986) show the aedeagus *in situ* partly concealed under the apical part of sternite 9, which has a pair of divergent pointed apical processes. The genitalia of *D. notata* are similar but the base of the caudomedial prong of the aedeagus is swollen while it is slender in *D. modesta*. A male of *D. modesta* was reared from mud at Duddingston Loch, Midlothian by ECPC, emerging 9.iii.1956.

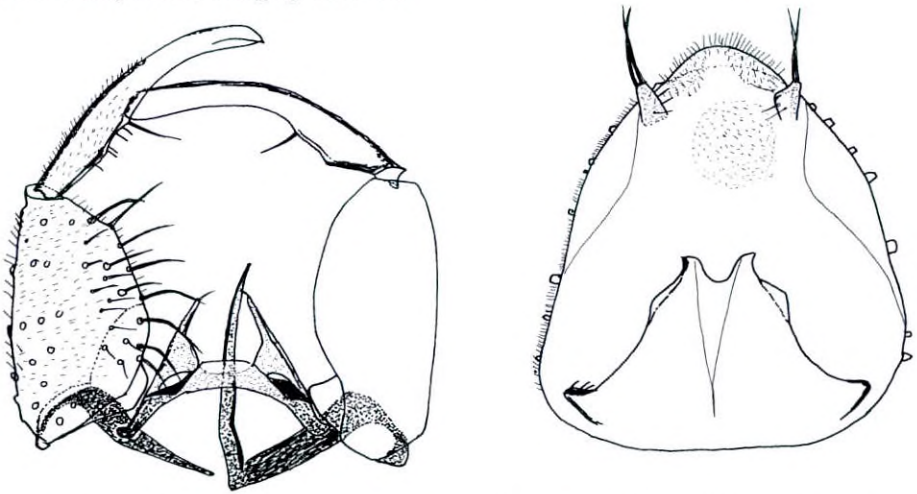


Fig. 8. ***Dasyhelea modesta*** **(Winnertz), male genitalia ventral view: left, gonocoxites and gonostyli, with aedeagus and parameres *in situ*; right, sternite and tergite 9.**

Dasyhelea* (*Dicryptoscena*) *lucida Remm in Remm & Zhogolev, 1968 (Fig. 9)

New to Britain.

Material: **SCOTLAND:** ARGYLLSHIRE: Lephinmore, 15.vii.1953, 1♂, ECPC, NMS.

Remarks. This species was described from material collected by light trapping in the Crimea (Ukraine) and has a wide Palaearctic distribution (Szadziewski and Borkent 2004). Remm and Zhogolev (1968) figured the male genitalia, including some variation in the form of the aedeagus, the distal pointed processes varying from convergence to divergence; in the British specimen they are parallel.

Fig. 9. *Dasyhelea lucida* **Remm, male genitalia: left, parameres and central, aedeagus separated; right, gonocoxite and gonostylus.**

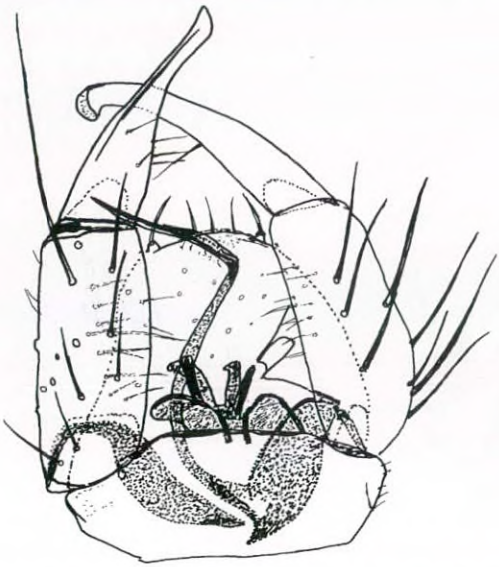


Fig. 10. *Dasyhelea* (*Dicryptoscena*) *stellata* **Remm, male genitalia, ventral view, with sternite and tergite 9** ***in situ*****.**

Dasyhelea* (*Dicryptoscena*) *stellata Remm in Remm & Zhogolev, 1968 (Fig. 10)
New to Britain.
Material. **SCOTLAND:** EASTER ROSS: Tarradale, 1.vi.2002, 1♂, saltmarsh, PJC.
Remarks. This species was also described from Crimean material. The specimen also fits the description and figures of *D. mayeri* Spataru & Damian-Georgescu, 1970, described from Romania and hitherto regarded as a synonym of *D. kurensis* Remm, 1967. Ryszard Szadziewski (*pers. comm.*) notes that *D. stellata* has slender apicolateral processes of tergite 9, which is typical of *Dasyhelea* sensu stricto, although these are rather short compared to other species of that subgenus so it should perhaps be transferred to the typical subgenus, but this requires study of further material and types. *Dasyhelea stellata* has been recorded from France, Germany and the Near East (Szadziewski and Borkent 2004), the Czech Republic (Tóthová and Knoz 2006) and recently identified from Poland, while *D. kurensis* was described from Azerbaijan and has been found in Algeria; its aedeagus differs in details of its structure but it is otherwise close and may be conspecific (Ryszard Szadziewski *pers. comm.*).

Subgenus ***Prokempia*** Kieffer, 1913
One British species, *D. flaviventris* (Goetghebuer, 1910), was until recently included in this subgenus. A second, *D. biunguis* Kieffer, 1925, was added by Boorman and Ismay (2003) and a third is added here.

Fig. 11. ***Dasyhelea luteiventris*** **Goetghebuer, male genitalia, ventral view: left, gonocoxites and gonostyli, with aedeagus and parameres *in situ*; right, sternite and tergite 9.**

Dasyhelea* (*Prokempia*) *luteiventris Goetghebuer, 1934 (Fig. 11)
New to Britain.
Material. **SCOTLAND:** ARGYLLSHIRE: Lephinmore, 1.vi.1952, at mercury vapour light, 1♂, ECPC, NMS.
Remarks. This species was described and figured by Remm (1966) as *D. spiralis* Remm and also figured under that name by Havelka (1976). Szadziewski (1986) found *D. spiralis* to be synonymous with *D. luteiventris*. It resembles *D. biunguis* in the form of sternite 9, but the median process is narrow basally and less deeply bifid, while the gonostylus has the broad basal lobe longer relative to the narrow apical lobe. It has a wide Palaearctic distribution (Szadziewski and Borkent 2004).

Subgenus ***Pseudoculicoides*** Malloch, 1915
Two British species have been assigned here. *Dasyhelea corinneae* Gosseries, 1961 was earlier known as *D. scutellata* (Meigen, 1830), a preoccupied name. The second species has been known as *D. flavoscutellata* (Zetterstedt, 1850) but it is necessary to correct this identification. A third species is added here.

Dasyhelea* (*Pseudoculicoides*) *turficola Kieffer, 1925 (Fig. 12)
= *Dasyhelea flavoscutellata* (Zetterstedt, 1850) sensu Edwards, 1926

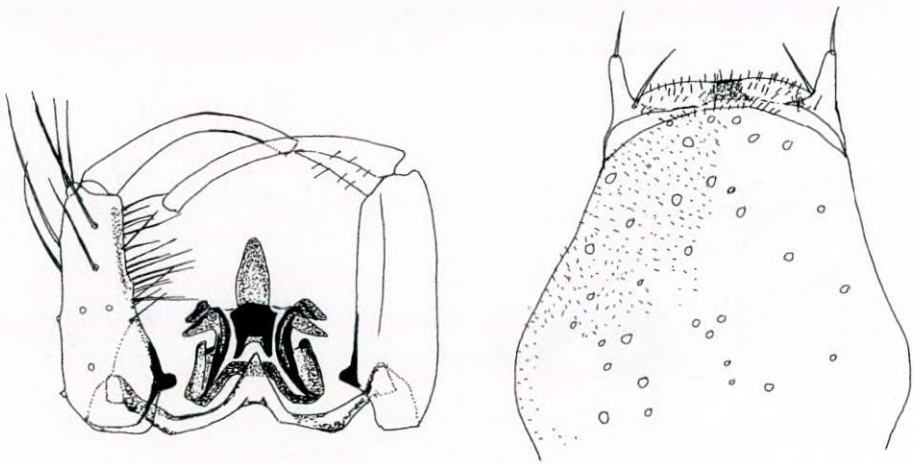


Fig. 12. *Dasyhelea turficola* Kieffer, male genitalia, ventral view: left, gonocoxites and gonostyli, with aedeagus and parameres *in situ*; right, distal part of tergite 9.

Material. **SCOTLAND:** ARGYLLSHIRE: Ballachulish, 1952, 2♂, reared from saline mud; Port Appin, 17.viii.1962, 1♂ (both ECPC, NMS); EASTER ROSS: Udale Bay, 29.v.2002, 3♂, PJC. **ENGLAND:** DORSET: Dawlish Warren, 14.vi.1920, 1♂, F.W. Edwards, BMNH; Hamworthy Junction, 3.viii.1906, J.W. Yerbury, BMNH; Studland, 18.vi.1951, 2♂, C.N. Colyer, BMNH;

HAMPSHIRE: Keyhaven, 10.vi.1969, 19♂ swept and 2♂ reared ex saltmarsh mud emerged 20.vi, J. Boorman, BMNH; LANCASHIRE: Humphrey Head, 1-8.vii.1923, 1♂, 1♀ and ♂♀ *in copula*, F.W. Edwards, BMNH; SUFFOLK: Walberswick TM4873, saltmarsh, 15.vii.2003, 4♂, PJC. **IRELAND:** CLARE: Ballyvaughan, 4.vi.1962, 1♂, ECPC, NMS; GALWAY: Inismore L8511, 21.vii.1990, margin of saline lake, 1♂, PA, NMI.

Remarks. This species was determined from Remm (1962b) and Szadziewski (1985), who figured the male genitalia. It was later realised that specimens in BMNH under the name *D. flavoscutellata* also belonged to this species so it is necessary to delete *D. flavoscutellata* from the British Isles list. This had earlier been recognised by Anthony Downes who had labelled some of the slides in BMNH as *D. turficola*.

This species is known to be associated with saltmarshes as are several other species of *Dasyhelea* (Szadziewski 1983), but has also been reared from non-saline damp soil in Poland (Szadziewski 1985). It is widely distributed in Europe and extends to the eastern Palaearctic and North Africa (Szadziewski and Borkent 2004).

Dasyhelea (Pseudoculicoides) neobifurcata Wirth, 1976 (Fig. 13)

New to Britain.

Material. **SCOTLAND:** ARGYLLSHIRE: Ballachulish, 1952, 5♂, 8♀, reared from saline mud, ECPC, NMS; Lephinmore, 1.vii.1952, in car, 1♂, ECPC, NMS. **ENGLAND:** SUFFOLK: Walberswick TM4873, saltmarsh, 15.vii.2003, 3♂, PJC.

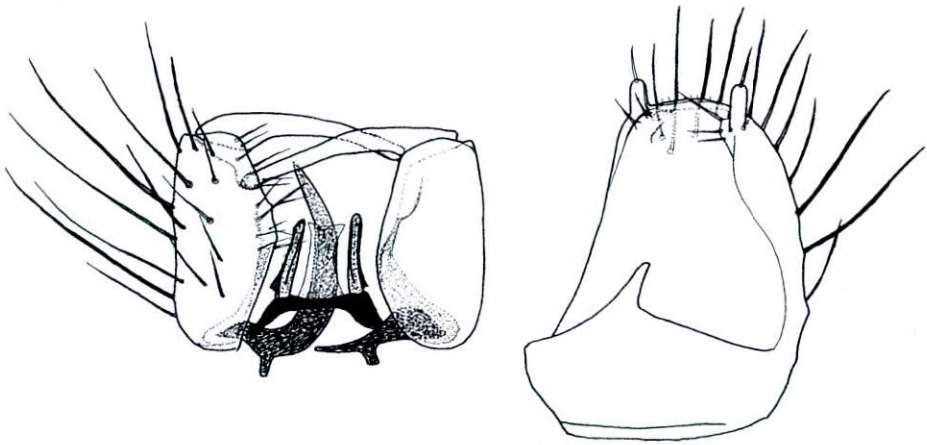


Fig. 13. ***Dasyhelea neobifurcata*** **Wirth, male genitalia, ventral view: left, gonocoxites and gonostyli, with aedeagus and parameres *in situ*; right, sternite and tergite 9.**

Remarks. Wirth (1952) first described this species from North America as *D. bifurcata* and a European subspecies *D. bifurcata europaea* was described by Remm (1962b). Wirth (1976) replaced the name *D. bifurcata* by *D. neobifurcata*, because of homonymy. It has since been realised that *D. europaea* is a distinct species but that *D. neobifurcata* also occurs in Europe.

Szadziewski (1986) found that some European records of *D. flavoscutellata* (e.g.. Zilahi-Sebess 1940) related correctly to *D. neobifurcata,* as do some of *D. bifurcata* (e.g. Damian-Georgescu 1973) (R. Szadziewski *pers. comm.*). It is thus a Holarctic species with previous European records from Hungary, Poland, Romania and Spain (Szadziewski and Borkent 2004).

Distinctions between males of *D. neobifurcata* and *D. europaea* are most obvious in the apicolateral processes of tergite 9, which are short and subcylindrical in *D. neobifurcata* while they are long, pointed and triangular in *D. europaea.*

This is another species known to be associated with saline habitats (Szadziewski 1983). The reared specimens from Ballachulish have the scutellum yellow while the single male from Lephinmore has it black.

Subgenus ***Sebessia*** Remm, 1979
As discussed above one British species belongs to this subgenus.

Dasyhelea (Sebessia) acuminata Kieffer, 1919 (Fig. 14)
Material. **ENGLAND:** Isle of Wight, Luccombe Chine, 4.vii.1980, 1♂, seepages on cliff, PJC.

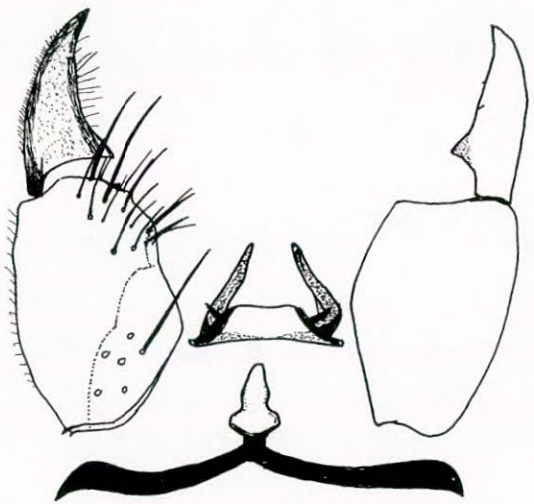


Fig. 14. *Dasyhelea acuminata* Kieffer, male genitalia, ventral view: left, gonocoxites and gonostyli, with aedeagus (above) and parameres separated.

Remarks. Szadziewski (1986) examined type material of *D. polita* Edwards, 1921 from the Isle of Arran and found it to be conspecific with *D. acuminata* based on a figure of the male genitalia by Zilahi-Sebess (1940). John Boorman (*pers. comm.*) found that other specimens

determined as *D. polita* by Edwards were not conspecific. The male genitalia of the Isle of Wight specimen are figured here.

FORCIPOMYIINAE

Forcipomyia Meigen, 1818

This is a large complex genus with 26 species in 9 subgenera hitherto recognised as British. Twelve of these belong to the typical subgenus, to which another is added here. The subgenus *Synthyridomyia* Saunders, 1956 hitherto included one British species and a second is added here. The Irish fauna of this genus has yet to be studied, only two distinctive species *F. brevicubitus* Goetghebuer, 1920 and *F. pulchrithorax* Edwards, 1924 having been recorded (Ashe and O'Connor 2002, Alexander and Chandler in press)

Forcipomyia (Forcipomyia) nigrans Remm, 1962 (Fig. 15)

New to Britain.

Material. **SCOTLAND:** FIFE: Tayport, Tentsmuir NNR, 23.v.1970, 3♂, ECPC, NMS.

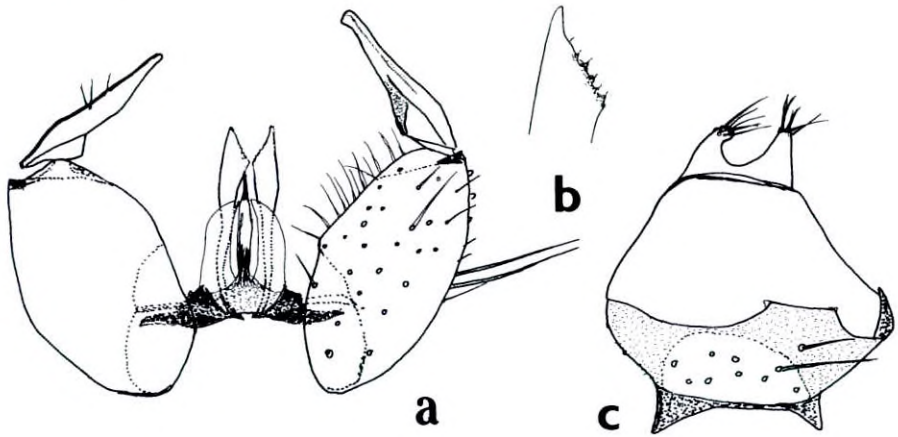


Fig. 15. ***Forcipomyia nigrans*** **Remm, male genitalia, ventral view: a, gonocoxite, and gonostylus, with parameres and aedeagus *in situ*; b, detail of tip of paramere; c, sternite and tergite 9.**

Remarks. The male genitalia of the Scottish specimens agree well with the figures by Remm (1962a) who described this species from Estonia. The genitalia were also figured by Gilka (1996), who reared *F. nigrans* from larvae found under rotting bark of *Betula* and *Alnus*, under fallen branches of *Pinus* and under mosses on a *Picea* log.

Remm (1962a) provided a key to the Estonian species of *Forcipomyia*, for which an English translation was included. This key includes, with *F. nigrans* and *F. knockensis*, 22 of the British species. *Forcipomyia nigrans* is a shining black species with dark halteres. The

apically broadened parameres with the margin appearing slightly serrated, are characteristic of *F. nigrans*. The only other British species with parameres broad apically is *F. sphagnophila* Kieffer, 1925, which is a paler greyish species.

Forcipomyia nigrans has been recorded in Europe from Germany, Poland, Norway, Estonia and Lithuania as well as from the eastern Palaearctic (Szadziewski and Borkent 2004).

Forcipomyia* (*Panhelea*) *brevicubitus Goetghebuer, 1920

Material. **ENGLAND:** SUFFOLK: Hengrave Hall grounds TL8268, 16.vii.2003, 1♂, PJC.

Remarks. Boorman (1997) recorded this species as new to Britain on a male from Surrey and figured the distinctive genitalia. Ashe and O'Connor (2002) recorded it from Ireland.

Forcipomyia* (*Synthyridomyia*) *knockensis Goetghebuer, 1938 (Fig. 16)

New to Britain.

Material. **ENGLAND:** SUFFOLK: Walberswick TM4873, saltmarsh, 15.vii.2003, 1♂, PJC.

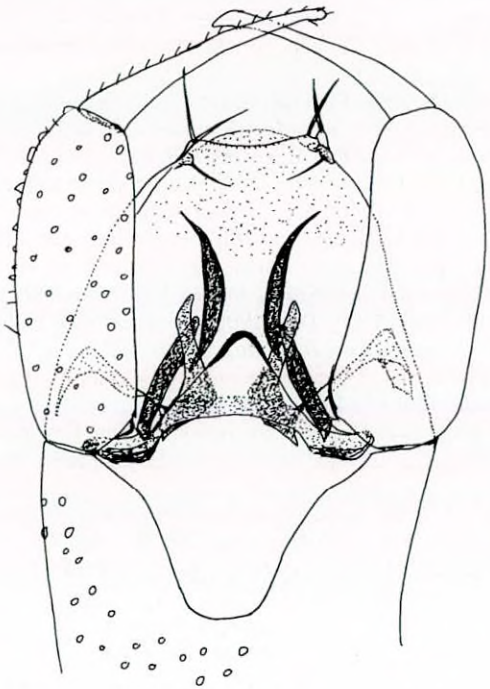


Fig. 16. ***Forcipomyia knockensis*** Goetghebuer, **male genitalia, ventral view with all parts *in situ*; including distal part of sternite and tergite 9.**

Remarks. The subgenus *Synthyridomyia* has distinctive male genitalia with club-shaped parameres. This species was included as *F. knockensis* in the key by Remm (1962b) but was also described and figured as *F. abludens* Remm in Remm & Zhogolev, 1968. Szadziewski (1986) found *F. abludens* to be synonymous with *F. knockensis*, described from Belgium. It is widespread in the Palaearctic (Szadziewski and Borkent 2004) and associated with saline habitats.

Acknowledgements

We are grateful to Ryszard Szadziewski for confirming the identity of most of the species new to the British list. We are also indebted to John Boorman for useful discussion and the circulation of his unpublished work has been invaluable in providing a basis for future study of this family in the British Isles.

References

Alexander, K.N.A. and Chandler, P.J. (in press) Twelve flies new to Ireland and one species confirmed as Irish from six historic demesnes (Diptera: Mycetophilidae, Sciaridae, Psychodidae, Scatopsidae, Ceratopogonidae, Dolichopodidae). *Irish Naturalists' Journal*.

Ashe, P. and O'Connor, J.P. 2002. First records of *Clinohelea unimaculata* (Macquart) and *Forcipomyia* (*Panhelea*) *brevicubitus* (Goetghebuer) (Dipt., Ceratopogonidae) from Ireland. *Entomologist's monthly Magazine* **138,** 133-134.

Ashe, P., O'Connor, J.P. and Chandler, P.J. 2002. New generic, subgeneric and species records of Ceratopogonidae (Diptera) from Ireland. *Dipterists Digest* **9,** 73-74.

Ashe, P., O'Connor, J.P. and Chandler, P.J. 2007. *Dasyhelea* (*Dasyhelea*) *saxicola* (Edwards) (Diptera: Ceratopogonidae) new to Ireland and Wales from limestone rockpools with a review of its ecology and distribution. *Entomologist's monthly Magazine* **143,** 113-126.

Ashe, P., O'Connor, J.P. and Murray, D.A. 1998a. A checklist of Irish aquatic insects. *Occasional Publications of the Irish biogeographical Society* No. **3,** 1-80.

Boorman, J. 1997. Two species of Ceratopogonidae (Dipt.) new to Britain. *Entomologist's monthly Magazine* **133,** 173-174.

Boorman, J. 2008. A guide to the British *Culicoides*. Institute for Animal Health http://www.iah.bbsrc.ac.uk/bluetongue/culicoides/salinarius. html (accessed by PA, 14.iv.2008).

Boorman, J. and Ismay, J. 2003. A species of *Dasyhelea* (Dipt., Ceratopogonidae) new to Britain. *Entomologist's monthly Magazine* **139,** 161-162.

Boorman, J. and Rowland, C. 1988. A key to the genera of British Ceratopogonidae (Diptera). *Entomologist's Gazette* **39,** 65-73.

Borkent, A. and Grogan, W.L. 1995. A revision of the genus *Ceratopogon* Meigen. *Memoirs of the Entomological Society of Washington* **15,** 1-198.

Campbell, J.A. and Pelham-Clinton, E.C. 1960. A taxonomic review of the British species of "*Culicoides*" Latreille (Diptera, Ceratopogonidae). *Proceedings of the Royal Society of Edinburgh, section B (Biology)* **67,** 181-302.

Chandler, P.J. 1998. (Ed.). Checklists of Insects of the British Isles (New Series). Part 1: Diptera (Incorporating a List of Irish Diptera). *Handbooks for the Identification of British Insects* **12**(1), i-xix, 1-234. Royal Entomological Society, London.

Clastrier, J. 1961. Notes sur les Cératopogonides. XV. - *Ceratopogon* et *Alluaudomyia* de la Region Paléarctique. *Archives de l'Institut Pasteur d'Algérie* **39,** 401-437.

Damian-Georgescu, A. 1973. Contribuţii la cunoaşterea genurilor *Forcipomyia* şi *Dasyhelea* (Diptera Ceratopogonidae) din Romania. *Studii şi cercetari de Biologie, Seria Zoologie* **25,** 447-454.

Dominiak, P. and Szadziewski, R. (in press) New synonymy and reports of biting midges in Poland (Diptera: Ceratopogonidae). *Polskie Pismo Entomologiczne* **77**.

Downes, J.A. 1978. Feeding and mating in the insectivorous Ceratopogoninae (Diptera). *Memoirs of the Entomological Society of Canada* **104,** 1-62.

Dzhafarov, S.M. 1964. *Blood-sucking midges (Diptera, Heleidae) of the Transcaucasus.* Akademiia Nauk Azerbaidzhanskoi SSR, Instituta Zoologicheskii. 414pp.

Edwards, F.W. 1926. On the British biting midges (Diptera, Ceratopogonidae). *Transactions of the Royal Entomological Society of London*, Part II. **74,** 389-426, pls xci-xcii.

Edwards, F.W. 1929. On the British non-biting midges. Appendix. *Transactions of the Royal Entomological Society of London* **77,** 425-428.

Edwards, F.W. 1933. Some Perthshire Diptera. *The Scottish Naturalist* **1933,** 89-92; 113-117.

Gilka, W. 1996. Immature stages of *Forcipomyia kaltenbachi* (Winnertz) and *Forcipomyia nigrans* Remm (Diptera: Ceratopogonidae). *Polskie Pismo Entomologiczne* **65,** 9-19.

Havelka, P. 1976. Limnologische und systematische studien an Ceratopogoniden. *Beiträge zur Entomologie* **26,** 211-305.

Remm, H. 1962a. [A survey of the species of the genus *Forcipomyia* Meigen (Diptera, Heleidae) from Estonia]. *Eesti NSV Teaduste Akadeemia Juures Asuva Loodusuurijatte Seltsi Aastaraamat* **54,** 165-195 (in Russian, Estonian summary, English translation of key).

Remm, H. 1962b. [The genus *Dasyhelea* Kieffer in Estonia (Diptera, Heleidae)]. *Tartu Riikliki Ulikooli Toimetised* **120** (Zoologia - Alaseia, Toid II), 108-133 (in Russian).

Remm, H. 1966. [On the Lithuanian biting midges]. *Tartu Riikliki Ulikooli Toimetised* **180,** 53-71 (in Russian).

Remm, H. 1967. [On the fauna of Ceratopogonidae in the Caucasus]. *Tartu Riikliki Ulikooli Toimetised* **194,** 3-37.

Remm, H. 1974a. [A review of species of the genus *Bezzia* Kieffer (Diptera, Ceratopogonidae) in the fauna of USSR. Communication I.] *Entomologicheskoe Obozrenie* **53,** 429-442. [in Russian] [English translation, *Entomological Review* **53,** 136-145].

Remm, H. 1974b. [A systematic review of species of the genus *Ceratopogon* Meigen (Diptera) from USSR]. *Tartu Riikliki Ulikooli Toimetised. Ucheniye Zapiski Tartuskogo Gosudarstvennogo* **327,** 23-58 (in Russian).

Remm, H. 1988. Family Ceratopogonidae. **In** Soós, Á. and Papp, L. *Catalogue of Palaearctic Diptera* **3,** 11-110.

Remm, H.J. and Zhogolev, D.T. 1968. [Contributions to the fauna of biting midges (Diptera, Ceratopogonidae) of the Crimea. *Entomologicheskoe Obozreniye* **47,** 826-842 (in Russian).

Spataru, P. and Damian-Georgescu, A. 1970. Metamorfoza la *Dasyhelea mayeri* n. sp. şi *Dasyhelea thienemanni* n. sp. (Ceratopogonidae, Diptera). 421-430 [in Romanian, French summary]

Szadziewski, R. 1983. Flies (Diptera) of the saline habitats of Poland. *Polskie Pismo Entomologiczne* **53,** 31-76.

Szadziewski, R. 1985. A review of the Palaearctic *Dasyhelea* (*Pseudoculicoides*) species of the *johannseni* group, with the description of two new species. *Polskie Pismo Entomologiczne* **55,** 79-98.

Szadziewski, R. 1986.Redescriptions and notes on some Ceratopogonidae (Diptera). *Polskie Pismo Entomologiczne* **56,** 3-103.

Szadziewski, R. 2007. Kuczmany (Ceratopogonidae). pp 28-30, 62-65. **In** Bogdanowicz, W., Chudzicka, E., Pilipuk, I and Skibińska, E.. (Eds) Fauna of Poland – characteristics and checklist of species. Museum i Instytut Zoologii PAN, Warszawa Vol 2, 505 pp.

Szadziewski, R. and Borkent, A. 2004. Fauna Europaea: Ceratopogonidae. **In** de Jong, H. (Ed.). Fauna Europaea: Diptera, Nematocera. *Fauna Europaea version 1.3*, http://www.faunaeur.org [consulted June 2008].

Szadziewski, R. and Hagan, D.V. 2000. Two new species of biting midges from Norway (Diptera: Ceratopogonidae). *Polskie Pismo Entomologiczne* **69**, 459-464.

Szadziewski, R., Kaczorowska, E. and Krzywiński, J. 1994. The predaceous midges of the subgenus *Brachypogon* in Poland (Diptera, Ceratopogonidae). *Acta zoologica cracoviensia* **37**(2), 1-32.

Tóthová, A. and Knoz, J. 2006. Ceratopogonidae. **In** Jedlička, L., Stloukalová, V. and Kúdela, M. (Eds) *Checklist of the Diptera of the Czech Republic and Slovakia*. Comenius University, Bratislava. http://www.zoology.fns.uniba.sk (consulted June 2008).

Verrall, G.H. 1901. A list of British Diptera. 2nd Edition. 47 pp. Cambridge University Press.

Wirth, W.W., Palchick, S.M. and Forster, L. 1984. The North American predaceous midges of the *Bezzia annulipes* group (Diptera: Ceratopogonidae). *Proceedings of the Entomological Society of Washington* **86,** 155-175.

Zilahi-Sebess, G. 1940. Magyarország Heleidae. *Folia entomologica hungarica* **5,** 10-133 [in Hungarian, German summary].

Dipterists Digest 2008 **15**, 95-98

Dorylomorpha occidens (Hardy, 1939) (Diptera, Pipunculidae) new to Britain

DAVID GIBBS and GRAHAM A. COLLINS*

6 Stephen Street, Redfield, Bristol, UK BS5 9DY david.usia@blueyonder.co.uk

*15 Hurst Way, South Croydon, Surrey, CR2 7AP. stigmella.aurella@tiscali.co.uk

Summary

The discovery of a single male *Dorylomorpha occidens* (Hardy, 1939) in a Malaise Trap sample from Surrey is reported. Its identification is discussed and the male genitalia illustrated.

Introduction

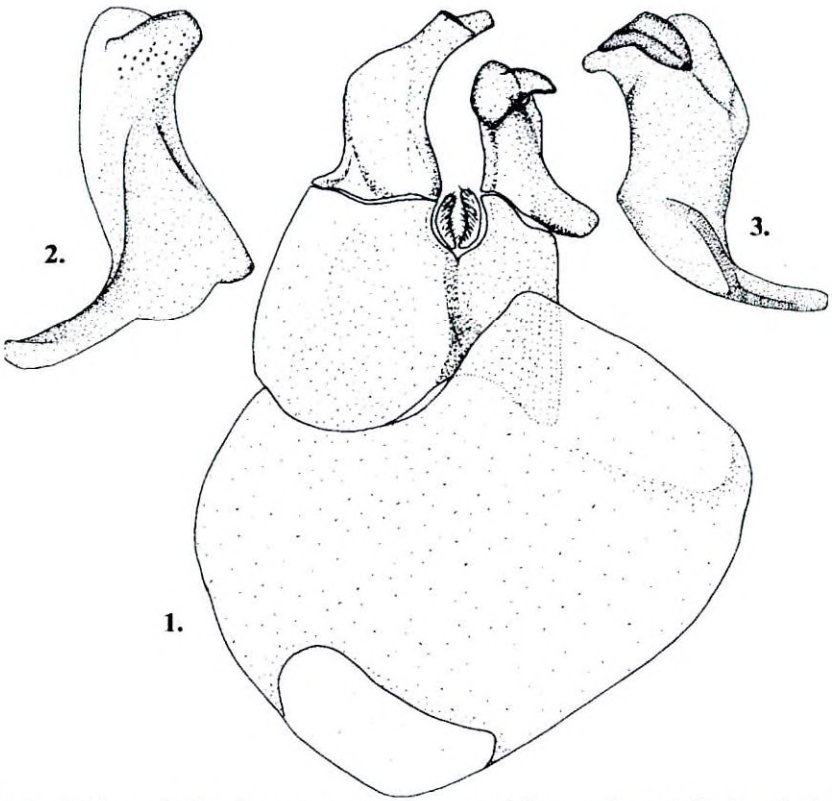
In 2004 GAC was commissioned by the local branch of Butterfly Conservation to survey Oaken Wood (SU9933) at Chiddingfold in Surrey (V.C. 17), for insects. Oaken Wood is a compartment within the larger Tugley Wood owned by Forest Enterprise and is managed by Butterfly Conservation. Part of the survey involved running a Malaise trap, which was installed on 24 May and operated until 30 September. The samples were collected on a monthly basis apart from the first one, which added the last week of May to the June catch.

The pipunculid specimens were passed to DG for identification. One of the few *Dorylomorpha* specimens in the samples had some characters in common with *D. infirmata* Collin and *D. xanthopus* Thomson, not keying cleanly to either on external characters (Coe 1966; Key to British *Dorylomorpha*, Gibbs in preparation). Dissection showed that it was not either of these species. Using Albrecht (1990) it keyed to couplet 16 where it proved difficult to interpret the postpedicel character, but if taken to be slightly attenuate, then the specimen ran to *D. occidens*. Reference to the figures provided by Albrecht (1990) confirmed this identification.

Identification

The single male specimen is very similar to *D. xanthopus* but with the postpedicel perceptibly more attenuate and paler (more brownish) and slightly more extensively darkened legs, notably with a partial dark band on the hind tibia, so in some keys it will run to *D. infirmata*. The following characters should serve to distinguish male *D. occidens* from British species of *Dorylomorpha*, other than *D. xanthopus* and *D. infirmata*:

Syntergosternite with a small, round membranous area (similar to *D. xanthopus*); hind tibia lacking an outstanding long anterior bristle in middle (as in *D. xanthopus*); abdomen entirely black (very occasionally with small yellow hind-margins in *D. xanthopus*); hind trochanter yellow; hind femora yellow at base and apex, with middle two-thirds dorsally blackish (as in darker examples of *D. xanthopus*); hind tibia with dark median spot ventrally (all yellow in *D. xanthopus*); eyes separated by at least the diameter of the front ocellus (as in *D. xanthopus*).



Figs 1-3. Male genitalia: 1, syntergosternite, epandrium and surstyli, dorsal view; 2, right surstylus, lateral view; 3, left surstylus, lateral view.

Given that there is a degree of variation, especially in leg colour, and that the shape of the postpedicel is a very subtle and easily misinterpreted character, it is always necessary to examine the male surstyli to rule out *D. xanthopus* and *D. infirmata*. Viewed dorsally (from below if genitalia are *in situ*) the right surstylus is curved inward to overtop the left surstylus, with a transverse ridge subapically. The left surstylus has an apical protuberance, pointing away from the right surstylus, at right angles (Fig. 1). In lateral view the right surstylus is almost parallel sided or tapering to apex (Fig. 2) (with a distinct basal bulge in *D. xanthopus* and *D. infirmata*). The left surstylus, viewed laterally, has a distinct apicodorsal projection (Fig. 3), not seen in either *D. xanthopus* or *D. infirmata*.

The genitalia of the Surrey specimen do not fit perfectly with those of the specimens from Idaho and Canada illustrated by Albrecht (1990). The holotype from Idaho lacks the

subapical ridge on the right surstylus and has a longer apicolateral protuberance on the left surstylus. Although the phallus (ejaculatory duct) is very close to the Canadian specimen illustrated by Albrecht (1990), the phallic guide (aedeagus) is much shorter and more triangular. It is not surprising that such variation should be present between Nearctic and Palaearctic populations. However, given that Albrecht (1990) did not mention any such infraspecific variability, the possibility that this is an undescribed species cannot be ruled out. With just a single British specimen to work with, no other European specimens available for study and the known tendency of many genera of Pipunculidae to exhibit variation in their genitalia across their geographical range, it would be premature to conclude that it is an undescribed taxon.

No females have been available for study and, if not associated with males, are likely to prove very difficult to identify. Albrecht (1990) differentiated *D. occidens* from *D. xanthopus* by the more elongate, long-acuminate postpedicel [= third antennal segment or first flagellomere] of the former as opposed to the obtusely pointed short-acuminate postpedicel of the latter. Judging from *D. anderssoni*, which falls into the long-acuminate group, this is just as subtle a character in females as it is in males, so unlikely to permit reliable identification. The ovipositor of *D. occidens* is a little shorter than that of *D. xanthopus* with the basal part of the piercer deeper than long (see Albrecht 1990, Figs 85 and 94).

Biology

The capture site is woodland on Weald clay. Some of the area has been planted with conifers but Oaken Wood itself is deciduous woodland, predominantly of oak. There are fairly large open, grassy areas with varying amounts of scrub, principally birch with areas of bracken and broom. In order to conceal the trap it was placed within a much smaller clearing on woodland edge and behind scrub comprising birch, sallow and aspen. The only other *Dorylomorpha* found in the sample was two male *D. rufipes*.

On the continent *D. occidens* has been found amongst *Vaccinium myrtillus* in open spruce *Picea* and birch *Betula* forest; on sandy grassland, a birch grove, spruce forest, dry meadow, roadside banks, grassy clearings in woodlands with *Calamagrostis* and *Deschampsia*, fens, marshy meadows, willow *Salix* thickets and dry, open pine *Pinus* forest (Albrecht 1990).

The host is unknown but *D. occidens* has been collected in association with a wide range of cicadellid species (see Albrecht 1990). In Scandinavia it would appear to be a univoltine species, overwintering in the pupal stage at least in the south. In Central Fennoscandia adults are found from late May to the end of June but do not emerge till August in North Fennoscandia (Albrecht 1990). The Surrey specimen was taken between 24 May and 30 June 2004, fitting well with the flight period recorded from central Scandinavia. At the time of writing only the samples from June and September have been processed, so it remains to be seen whether any further specimens are present in the mid-summer catches.

Distribution and Status in Britain

As currently defined taxonomically, *D. occidens* is a Holarctic species found across Canada (Alberta, British Columbia, North West Territory, Ontario, Quebec), USA (Alaska, Idaho,

New York, West Virginia), Estonia, Finland, Latvia, Netherlands, Norway, Sweden and Russia (Amur region, Karelia, St Petersburg region, Moscow region, Tyumen region, Yakutia) (Albrecht 1990; www.faunaeur.org). Given the record from the near continent in the Netherlands, its discovery in Britain is not very surprising. So far just a single male has been found. While it is very likely that other specimens remain undiscovered in collections, it will certainly not prove to be a common species. Whether this species is a recent arrival in Britain or an overlooked resident is impossible to guess at. Although the host is unknown, it is most likely to be associated with sedges or grasses, so not the type of species likely to be imported with the plant trade.

Acknowledgements
GAC would like to thank Malcolm Bridge, Butterfly Conservation, Surrey and south-west London branch for commissioning this survey.

References

Albrecht, A. 1990. Revision, phylogeny and classification of the genus *Dorylomorpha* (Diptera, Pipunculidae). *Acta Zoologica Fennica* **188,** 1-240.

Coe, R.L. 1966. Diptera, Pipunculidae. *Handbooks for the Identification of British Insects* **10** (2c), 83 pp. Royal Entomological Society, London.

Eudorylas longifrons Coe, 1966 (Diptera, Pipunculidae) new to Ireland

– Among some Pipunculidae passed by PJC to DJG for identification, there was a single male of *Eudorylas longifrons* Coe, a species that has not previously been recorded from Ireland. This specimen was collected at Bray, County Wicklow 30.vii-1.viii.1970 by C.E. Dyte. *Eudorylas longifrons* is a widespread species in southern England with scattered records north to Northumberland and has been recorded from a range of open habitats with rough grassland.

Only four species of the large genus *Eudorylas* have previously been recorded from Ireland. Species of this genus may be identified from the key to the British species of the tribe Eudorylini provided by D.M. Ackland (2002. Test keys to British Eudorylini (including figures of the male and female genitalia). *The Piercer A Pipunculidae Newsletter*, No. **3,** 2-8 + 23 unnumbered pages of figures) (circulated with *Bulletin of the Dipterists Forum* No. **53,** Spring 2002).

The Irish pipunculid list was updated by P.J. Chandler, J.P. O'Connor, R. Nash and P. Withers (2002. Diptera new to Ireland in seventeen families. *Dipterists Digest (Second Series)* **9,** 121-136) who increased the list to 30 species and indicated that the Irish fauna of this family had been neglected. Many further additions can be anticipated.

We thank Peter Dyte for the opportunity to examine material collected by him in Ireland - **D.J. GIBBS,** 6 Stephen Street, Redfield, Bristol, UK BS5 9DY and **P.J. CHANDLER,** 606B Berryfield Lane, Melksham, Wilts SN12 6EL

Dipterists Digest Volume 15, No. 1 2008

continued inside back cover

Published by

Dipterists Forum

ISSN 0953-7260

Printed and bound in the United Kingdom by Henry Ling Limited at the Dorset Press, Dorchester, DT1 1HD