Sciomyzidae Recording Scheme

Newsletter 3: September 2003

Introduction

This Newsletter gives news of progress with the Sciomyzidae Recording Scheme, includes a summary of currently available identification literature that can be used to determine the British species and announces a call in for available records prior to the production of a new identification guide to the British and Irish fauna.

The Sciomyzidae Recording Scheme covers the 68 species of Sciomyzidae (67 species in Chandler, 1998 plus one added since by Cole, 2003) recorded from Britain and Ireland, plus the two species of *Pelidnoptera* now included in the Phaeomyiidae. The latter (*Pelidnoptera fuscipennis* and *P. nigripennis*) were formerly included as a subfamily of the Sciomyzidae, but Griffiths (1972) elevated the group to family status as part of a detailed phylogenetic study of the Diptera Cyclorrhapha using characters of the male genitalia. Additional evidence that supports the family status of the Phaeomyiidae has been obtained by Vala *et al*. (1990) who discovered that *Pelidnoptera nigripennis* has larvae that are specialist parasitoids of millipedes, whereas the larvae of all Sciomyzidae that have been reared feed on molluscs.

References for Introduction

Chandler, P.J. 1998. Part 1: Diptera. Checklists of Insects of the British Isles. *Handbooks for the Identification of British Insects* **12**: 1-234. Royal Entomological Society, London.

Cole, J.H. 2003. *Pherbellia stylifera* Rozkošný, a member of the snail-killing family Sciomyzidae (Diptera) new to Britain from Cambridgeshire. *British Journal of Entomology and Natural History* **16**: 10-12.

Griffiths, G.C.D. 1972. The phylogenetic classification of the Diptera Cyclorrhapha with special reference to the structure of the male postabdomen. *Series Entomologica* **8**: 1-340.

Vala, J.-C., Bailey, P.T. & Gasc, C. 1990. Immature stages of the fly *Pelidnoptera nigripennis* (Fabricius) (Diptera: Phaeomyiidae), a parasitoid of millipedes. *Systematic Entomology* **15**: 391-399.

News

A steady stream of records continue to be submitted to Ian McLean, despite no recent call for records, and these contributions are most welcome, and suggest that there is a continuing high level of enthusiasm for recording these attractive and interesting flies. Currently, new records are being entered on a Recorder 2002 database, while the checking and conversion of the earlier records (mainly compiled by Stuart Ball) from Recorder 3 will begin over the coming winter.

Museum collections at Liverpool and Oxford have had many records abstracted and Ian McLean has started to collate the records from the British collection at the Natural History Museum in London and from the Royal Museums of Scotland in Edinburgh. Andy Foster is planning to tackle record abstraction from collections at Cardiff and local museums in the west of England in the coming months, while Ian aims to finish the major museums and begin to visit local museums in the east of England. If you know of any collections of Sciomyzidae, either in local museums or elsewhere, then please contact Ian in the first instance so that arrangements can be made to incorporate their records into the recording scheme database.

New identification guide in preparation

Ian McLean has been preparing new keys to British Sciomyzidae and Phaeomyiidae, early drafts of which have been tested and commented upon at identification workshops. It is hoped to complete the

keys and text before the end of 2004, with work on the illustrations proceeding at the same time. The aim is to make identification of all species easier, including of those females which tend to cause difficulty without associated males. It is hoped that publication of a new identification guide will increase the number of contributors to the recording scheme and thereby improve the recording coverage. After publication of the new guide it is intended to progress towards the production of more detailed maps for a new atlas and to increase the compilation of information that will improve our knowledge of the biology, status and conservation significance of these flies.

Photos of live Sciomyzidae or Phaeomyiidae – can you help?

It is intended to include colour photographs of a selection of live adult Sciomyzidae and Phaeomyiidae in the identification guide. This will help with field recognition of the two families and some of the genera and more distinctive species. If you have any good quality photographs that you would like to be considered for inclusion, then please contact Ian McLean at the address below. Either 35mm colour slides or digital images will be welcome, but please do not send large image files as E-mail attachments without checking in advance – thank you!

Field recording tips

Sciomyzidae are generally distinctive and quite easy to recognise when seen alive in the field, either when observed at rest on vegetation or after capture in a net or pooter. Their distinctive gait, often with the front legs stretching far forwards as they walk and their prominent porrect (forward-pointing) antennae that look different from other acalyptrate Diptera. Many Sciomyzidae have patterned wings, with the body colours often in combinations of browns, yellows and greys, with a few jet-black species for variety. The smaller species can be overlooked in the net (*Colobaea* and *Pteromicra* in particular) amongst numerous other small Diptera found in damp situations (including beside ponds and ditches) where these Sciomyzidae are typically found. The two *Pelidnoptera* (Phaeomyiidae) species have infuscated wings and resemble larger Sciomyzidae to a certain extent, although their antennae are less prominent than most Sciomyzidae.

Favoured habitats

Sciomyzidae are found in greatest number and variety where their mollusc hosts are abundant, so habitats based on calcareous geology (chalk and limestone woodlands and grasslands, fens and coastal dunes) are best, with a smaller fauna on more acid grasslands and wetlands. The peak month for finding most species is June, but many species have a long season, with some found in any month of the year. The majority of species have some association with wetlands (including alongside ponds and ditches in predominately drier habitats), although some (including the common *Pherbellia cinerella* and the rare *Pherbellia knutsoni*) are confined to dry grasslands and dunes. Many Sciomyzidae occur in low numbers, so it will take some time and concentrated effort to build up a representative species list on a single visit, while multiple visits over several seasons are usually needed to compile a reasonably complete site inventory.

Sweeping

Sweeping through vegetation is a good method of finding many Sciomyzidae and the two species of Phaeomyiidae. In wetlands, sweeping through different vegetation types is a good way of recording many species, while others will be confined to the margins of water bodies (ponds and ditches etc.). Where water levels have fallen around ponds and ditches, after dry periods in spring and summer, many molluscs can become stranded and moribund on mud and remnant vegetation, thereby attracting numerous adult Sciomyzidae. These will include *Pherbellia* species and those tiny *Colobaea* and *Pteromicra* species that are so easily overlooked. Sweeping slowly, with the net frame as close to the drying out surface of the mud as possible, is the best way of capturing those Sciomyzidae present, which will typically be outnumbered by thousands of Ephydridae!

In grasslands and dunes, sweeping through taller vegetation is likely to be most productive because few species are found amongst shorter vegetation (with the exception of *Pherbellia cinerella*).

In woodlands, sweeping along rides and over any damp or flushed areas will be productive, while sweeping within shaded parts of calcareous woodlands in autumn can result in the discovery of *Pherbellia scutellaris*. In May-June, *Pherbellia annulipes* can be found in calcareous woods, typically by sweeping around moss-covered fallen tree trunks, where the adults can be observed walking slowly with their dark fore-legs stretching far forwards. The two *Pelidnoptera* species (Phaeomyiidae) are usually found at the edges of woodlands, where their millipede hosts occur.

In bogs and upland areas, most Sciomyzidae can be found in flushed areas or around pools where there are molluscs present. *Dictya umbrarum* is a characteristic species found on flushes, which has distinctive spotted wing markings that are distinctive even in the field. Sweeping through taller vegetation will capture some species such as *Tetanocera*, while others are best found by sweeping slowly through marginal vegetation just above the water line.

Pooting or tussocking

While sweeping is the preferred method of finding many Diptera, including Sciomyzidae, taking time out to explore the fauna sheltering within tussocks of grasses, sedges and rushes can reveal many species that are seldom, if ever, caught in a sweep net. Among the Sciomyzidae, *Pteromicra angustipennis* and *Antichaeta brevipennis* are two species with short wings that are much more readily found by getting down on hands and knees and working through large tussocks with a pooter. *Antichaeta brevipennis* has been found quite close to the water line alongside a ditch with dense overhanging vegetation, while *Pteromicra angustipennis* can occur frequently in pitfall traps set in wetland habitats. Other Sciomyzidae can also be found by pooting amongst dense vegetation in wetlands, or by working through large tussocks, although many species are alert and adept at avoiding capture with a pooter.

Winter recording

A few Sciomyzidae can be found as adults through the winter (several *Pherbellia* species occur then including *P. argyra, P. brunnipes, P. schoenherri* and *P. ventralis*; *Hydromyia dorsalis* can be swept, while some *Tetanocera* species have been taken in water traps during the winter months). Hence, if you have the chance to record Diptera at this season, then surveying wetland localities is one way of increasing coverage for the recording scheme at a time when adult Diptera are otherwise scarce.

Habitat recording

Please note the habitat where you record each sample of Sciomyzidae or Phaeomyiidae and thereby help to improve our knowledge of the biology and habitat preferences of these two families. Where available, basic information about the management of the area sampled is valuable, while if you know the age of newly created habitats (for example, new wetlands created alongside a new road development) then this will give information about which species colonise such areas first. Conversely, if you know an area is ancient woodland or ancient wetland, then this information will help with discovering which species are found in these long-established habitats.

Call in for records

In order to have the available distribution information included (at a summary level) in the new identification guide, any dipterists who have records of Sciomyzidae that have not yet been submitted to the recording scheme are invited to contact Ian McLean to discuss how their records can best be submitted. It would be helpful if as many records as possible can be incorporated within the database

before May 2004 so that the distribution and other information can be incorporated in the text of the species accounts during 2004. Draft maps will be made available, probably via the NBN Gateway, during 2004. Unidentified material for determination is also very welcome, please contact Andy Foster or Ian McLean to arrange for your specimens to be identified.

New BRC record card

A new BRC record card for Sciomyzidae and Phaeomyiidae is in preparation and should be available shortly. For those without computer facilities, this will enable more convenient collation and submission of records for multiple species from a single sample. A family card is quicker, both for the recorder and for the recording scheme, when processing and inputting this category of data than is the use of the single species GEN 13 cards, although the latter are still needed when abstracting records from collections where the specimens are arranged in taxonomic order.

How to submit records

If you have not submitted records before, please contact Ian McLean in advance to arrange for your records to be dealt with in the most convenient way. Voucher specimens will be checked by Ian for all those with less experience who are learning to record and identify the family. Records are welcome as site lists, in reports and papers and in other written forms providing that the usual minimum data are included (species name, collector, determiner, date, site name and grid reference).

A process for Electronic data submission is being arranged. Darwyn Sumner has kindly offered to compile data for the recording scheme from different spreadsheet and database formats; news of how this process will operate will be given when Ian and Darwyn have made the necessary arrangements.

Identification advice

The British List of Sciomyzidae and Phaeomyiidae is annotated in the following table to show those species where special care is required for their identification and where examination of the male genitalia and retention of voucher specimens is essential to support valid records for the recording scheme. If you are new to recording and identifying Diptera, or if you have not identified these families previously, please have all your identifications confirmed by an experienced dipterist. If you do not know anybody who can help you, then please ask Ian McLean or Andy Foster, who will be very pleased to identify or check your material for you. Either pinned specimens or material preserved in alcohol are equally welcome.

Table 1 summarises the coverage of the three main published key works (column 2) that can be used to identify the British and Irish Sciomyzidae and Phaeomyiidae, with species that are more distinctive and easier to identify shown on a tinted background, while those species where accurate identification requires greater care are shown on a white background (where possible, identifications of these more difficult species should be confirmed by examination of the male genitalia, see column 3). Ideally, voucher specimens should be retained to support records of the more difficult species (column 4), except for those with considerable experience of identifying the family. When in doubt, always retain a voucher specimen and ask for your identification to be confirmed by one of the scheme organizers. Although bristle characters are generally reliable, there is some variation and aberrant *Tetanocera* with missing or extra leg bristles can be especially awkward. Females of many species can be easily misidentified (particularly in larger genera, notably *Pherbellia* and *Tetanocera*, while female *Colobaea*, *Pteromicra*, *Antichaeta*, *Limnia*, *Psacadina* and *Renocera* also require special care). Therefore, when you find only a female or females of these difficult genera from a locality, always retain them as vouchers for your records and ask to have your records confirmed until you build up experience and a reference collection for comparison. It should be borne in mind that there may be additional species as yet undiscovered in Britain; the most likely additions are in the genus *Pherbellia* and also *Pherbina intermedia* (which closely resembles the very common *Pherbina coryleti*, but lacks the prominent tuft of black hairs on the gonostylus of the male genitalia).

Table 1 Identification of British Sciomyzidae and Phaeomyiidae

Species	Key work	Genitalia	Vouchers
PHAEOMYIIDAE			
Pelidnoptera fuscipennis	**1**, **2**, **3**.	Yes	Yes
Pelidnoptera nigripennis	**1**, **2**, **3**.	Yes	Yes
SCIOMYZIDAE			
SALTICELLINAE			
Salticella fasciata	*1*, **2**, **3**.	No	Yes
SCIOMYZINAE			
Sciomyzini			
Colobaea bifasciella	**1**, **2**, **3**.	Yes	Yes
Colobaea distincta	**1**, **2**, **3**.	Yes	Yes
Colobaea pectoralis	**1**, **2**, **3**.	Yes	Yes
Colobaea punctata	**1**, **2**, **3**.	Yes	Yes
Ditaeniella grisescens	**1**, **2**, **3**.	Yes	Yes
Pherbellia albocostata	**1**, **2**, **3**.	Yes	Yes
Pherbellia annulipes	**1**, **2**, **3**.	Yes	Yes
Pherbellia argyra	**1**, **2**, **3**.	Yes	Yes
Pherbellia brunnipes	**1**, **2**, **3**.	Yes	Yes
Pherbellia cinerella	**1**, **2**, **3**.	No	No
Pherbellia dorsata	**1**, **2**, **3**.	Yes	Yes
Pherbellia dubia	**1**, **2**, **3**.	Yes	Yes
Pherbellia griseola	**1**, **2**, **3**.	Yes	Yes
Pherbellia knutsoni	**–**, **2**, **3**.	Yes	Yes
Pherbellia nana	**1**, **2**, **3**.	Yes	Yes
Pherbellia pallidiventris	**1**, **2**, **3**.	Yes	Yes
Pherbellia rozkosnyi	**1**, **2**, **3**.	Yes	Yes
Pherbellia schoenherri	**1**, **2**, **3**.	Yes	Yes
Pherbellia scutellaris	**1**, **2**, **3**.	Yes	Yes
Pherbellia sordida	**1**, **2**, **3**.	Yes	Yes
Pherbellia stylifera	**1**, **2**, **3**.	Yes	Yes
Pherbellia ventralis	**1**, **2**, **3**.	Yes	Yes
Pteromicra angustipennis	**1**, **2**, **3**.	Yes	Yes
Pteromicra glabricula	**1**, **2**, **3**.	Yes	Yes
Pteromicra leucopeza	**1**, **2**, **3**.	Yes	Yes
Pteromicra pectorosa	**1**, **2**, **3**.	Yes	Yes
Sciomyza dryomyzina	**1**, **2**, **3**.	Yes	Yes
Sciomyza simplex	**1**, **2**, **3**.	Yes	Yes
Sciomyza testacea	**1**, **2**, **3**.	Yes	Yes
Tetanura pallidiventris	**1**, **2**, **3**.	No	Yes

Species	Key work	Genitalia	Vouchers
Tetanocerini			
Anticheta analis	**1**, **2**, **3**.	Yes	Yes
Anticheta atriseta	**1**, **2**, **3**.	Yes	Yes
Anticheta brevipennis	**1**, **2**, **3**.	Yes	Yes
Anticheta obliviosa	**1**, **2**, **3**.	Yes	Yes
Coremacera marginata	**1**, **2**, **3**.	No	No
Dichetophora finlandica	**1**, **2**, **3**.	Yes	Yes
Dichetophora obliterata	*1*, **2**, **3**.	Yes	Yes
Dictya umbrarum	**1**, **2**, **3**.	No	No
Ectinocera borealis	**1**, **2**, **3**.	Yes	Yes
Elgiva cucularia	**1**, **2**, **3**.	No	No
Elgiva solicita	**1**, **2**, **3**.	No	No
Euthycera fumigata	**1**, **2**, **3**.	No	No
Hydromya dorsalis	**1**, **2**, **3**.	No	No
Ilione albiseta	**1**, **2**, **3**.	No	No
Ilione lineata	**1**, **2**, **3**.	No	No
Limnia paludicola	**1**, **2**, **3**.	Yes	Yes
Limnia unguicornis	**1**, **2**, **3**.	Yes	Yes
Pherbina coryleti	**1**, **2**, **3**.	No	No
Psacadina verbekei	**1**, **2**, **3**.	Yes	Yes
Psacadina vittigera	*1*, **2**, **3**.	Yes	Yes
Psacadina zernyi	**1**, **2**, **3**.	Yes	Yes
Renocera pallida	**1**, **2**, **3**.	Yes	Yes
Renocera striata	**1**, **2**, **3**.	Yes	Yes
Renocera stroblii	**1**, **2**, **3**.	Yes	Yes
Sepedon sphegea	**1**, **2**, **3**.	No	No
Sepedon spinipes	**1**, **2**, **3**.	No	No
Tetanocera arrogans	**1**, **2**, **3**.	Yes	Yes
Tetanocera elata	**1**, **2**, **3**.	Yes	Yes
Tetanocera ferruginea	**1**, **2**, **3**.	Yes	Yes
Tetanocera freyi	**1**, **2**, **3**.	Yes	Yes
Tetanocera fuscinervis	**1**, **2**, **3**.	Yes	Yes
Tetanocera hyalipennis	**1**, **2**, **3**.	Yes	Yes
Tetanocera phyllophora	**1**, **2**, **3**.	Yes	Yes
Tetanocera punctifrons	**1**, **2**, **3**.	Yes	Yes
Tetanocera robusta	**1**, **2**, **3**.	Yes	Yes
Tetanocera silvatica	**1**, **2**, **3**.	Yes	Yes
Trypetoptera punctulata	**1**, **2**, **3**.	No	No

Three recommended key works (full references in the literature list below) are cited here by code numbers (in **bold** = full treatment of species; in *italics* = partial treatment of species; (–) = species not included) are:

1. Rozkošný, R. 1984a;
2. Rozkošný, R. 1987b;
3. Vala, J.-C. 1989.

Literature on Sciomyzidae and Phaeomyiidae

The following list of selected references to books and papers on Palaearctic Sciomyzidae and Phaeomyiidae (plus papers on recent additions to the British List) should help those intending to study these families more intensively, either in Britain or continental Europe. A more extensive bibliography for Sciomyzidae and Phaeomyiidae is currently in preparation, by Ian McLean.

Ball, S.G. & McLean, I.F.G. 1986. *Preliminary atlas*. Sciomyzidae Recording Scheme Newsletter 2. *Available on request from Ian McLean, this atlas summarises the records received and the literature up to that date.*

Cole, J.H. 1988. *Antichaeta obliviosa* Enderlein (Diptera: Sciomyzidae) new to Britain. *The Entomologist* **107**: 155.

Cole, J.H. 2003. *Pherbellia stylifera* Rozkošný, a member of the snail-killing family Sciomyzidae (Diptera) new to Britain from Cambridgeshire. *British Journal of Entomology and Natural History* **16**: 10-12.

Elberg, K. & Rozkošný, R. 1978. Taxonomic and distributional notes on some Palaearctic Sciomyzidae (Diptera). *Scripta Facultatis Scientiarium Naturalium Universitatis Purkynianae Brunensis, Biologia* **2**: 47-54.

Foster, A.P. & Procter, D.A. 1997. *Antichaeta atriseta* (Loew) (Diptera, Sciomyzidae) in Britain, and its occurrence with other scarce malacophagous flies. *British Journal of Entomology and Natural History* **10**: 73-76.

McLean, I.F.G. 1983. Sciomyzidae Recording Scheme Newsletter 1. *Includes draft keys and recording advice*.

Rivosecchi, L. 1992. Diptera Sciomyzidae. *Fauna d'Italia* **30**: 1-270 + 23 plates. *A thorough and well-illustrated treatment of the Italian fauna of Sciomyzidae and Phaeomyiidae* (*83 species). [In Italian]*.

Rozkošný, R. 1981. A new name and some new synonyms of Palaearctic Sciomyzidae (Diptera). *Entomologica Scandinavica* **12**: 177-180.

Rozkošný, R. 1982. Three new species of *Pherbellia* Robineau-Desvoidy and new synonyms of Holarctic and Palaearctic Sciomyzidae (Diptera). *Annales Entomologici Fennici* **48**: 51-56.

Rozkošný, R. 1984a. The Sciomyzidae (Diptera) of Fennoscandia and Denmark. *Fauna Entomologica Scandinavica* **14**: 1-224. *Keys to most British species.*

Rozkošný, R. 1984b. Review of *Colobaea* Zetterstedt (Diptera: Sciomyzidae), with a new species from northern Scandinavia. *Entomologica Scandinavica* **15**: 85-88.

Rozkošný, R. 1987a. Eight new synonyms of Palaearctic Sciomyzidae (Diptera). *Acta Entomologica bohemoslovaca* **84**: 106-110.

Rozkošný, R. 1987b. A review of the Palaearctic Sciomyzidae (Diptera). *Folia Facultatis Scientiarium Naturalium Universitatis Purkynianae Brunensis, Biologia* **86**: 1-100 + 56 plates. *Keys to all Palaearctic species of Sciomyzidae and Phaeomyiidae known as of 1984 (161 species); well-illustrated. [In English]*.

Rozkošný, R. 1991. A key to the Palaearctic species of *Pherbellia* Robineau-Desvoidy, with descriptions of three new species (Diptera, Sciomyzidae). *Acta Entomologica bohemoslovaca* **88**: 391-406.

Rozkošný, R. 1998a. Family Sciomyzidae. **In**: Papp, L. & Darvas, B. (Eds) *Contributions to a Manual of Palaearctic Diptera* **3**: 357-376. *Keys to genera and contain useful references to biology and taxonomy. [Expensive to purchase]*.

Rozkošný, R. 1998b. Family Phaeomyiidae. **In**: Papp, L. & Darvas, B. (Eds) *Contributions to a Manual of Palaearctic Diptera* **3**: 377-382. *Family diagnosis and useful references to biology and fossil species.*

Rozkošný, R. & Elberg, K. 1984. Family Sciomyzidae. **In**: Soós, Á. & Papp, L. (Eds) *Catalogue of Palaearctic Diptera* **9**: 167-193. *Catalogue of Palaearctic species that also contains many useful taxonomic references. [Expensive to purchase]*.

Vala, J.-C. 1989. Diptères Sciomyzidae euro-méditerranéens. *Faune de France* **72**: 1-300 + 9 plates. *A thorough and well-illustrated treatment of the French fauna of Sciomyzidae and Phaeomyiidae* (*82 species*) *that also keys the 142 species recognised by Vala as occurring in the Euro-Mediterranean region, as well as including some other Palaearctic species. [In French]*.

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