LEICESTERSHIRE ENTOMOLOGICAL SOCIETY

The status of Diptera in VC55

Families with up to 10 species

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LESOPS 40 (August 2021)

ISSN 0957 - 1019

Introduction

A preliminary assessment of the status of flies (Diptera) in Leicestershire & Rutland (VC55) was produced in 2019 (Morris, 2019). Summaries of the number of species in families known to be in VC55 at that time were presented with the intention that fuller status assessments would be made in due course. The known records of flies to the end of 2020 are now being collated, checked, validated and plotted in order to produce a sequence of status reports as part of the Leicestershire Entomological Society Occasional Publication Series (LESOPS). Reviews of the Conopidae and Tephritidae have already appeared (Morris, 2021a, b) and are now followed by consideration of records from the fly families with a maximum of 10 species (Table 1).

Table 1: Families with up to 10 species (based on Dipterists Forum listing January 2021).

Acartophthalmidae (2) Campichoetidae (2) Helcomyzidae (1) Pseudopomyzidae (1) Acroceridae (3) Heterocheilidae (1) Ptychopteridae (7) Chaoboridae (6) Anisopodidae (4) Chiropteromyzidae (1) Lonchopteridae (7) Rhiniidae (1) Meganerinidae (1) Rhinophoridae (8) Asteiidae (8) Clusidae (10) Atelestidae (2) Cnemospathidae (1) Micropezidae (10) Scenopinidae (2) Athericidae (3) Coelopidae (3) Mycetobiidae (3) Stenomicridae (3) Aulacigastridae (1) Cryptochetidae (1) Nycteribiidae (3) Strongylophthalmyiidae (1) Cylindrotomidae (4) Thaumaleidae (3) Bombylidae (10) Odinidae (9) Borboropsidae (1) Diadocidiidae (3) Opetidae (1) Tanypezidae (1) Diastatidae (6) Periscelididae (4) Brachystomatidae (4) Trixoscelididae (5) Braulidae (2) Ditomyiidae (3) Platystomatidae (2) Xylomyidae (3) Camillidae (5) Dryomyzidae (3) Polleniidae (8) Xylophagidae (3)

Families with VC55 records

The local paucity of records for many of these families can often be explained by (a) issues with identification (including difficult or out-of-date keys), (b) their often small size ensuring them being overlooked or (c) lack of interest in them! Many of the records have been as the results of surveys carried out by professional ecologists/entomologists for planning applications and the like. The problems of identification have been previously been described (Morris, 2019) with levels of difficulty (1 to 5) defined by the Dipterists Forum (DF).

Distribution of each species is shown using MapMate® with the legend for each showing the number of records up to 2020. Nomenclature is based on the latest checklist produced by the Dipterists Forum as of 2 January 2021. Reference to usable identification keys for each family is given, where available, and an indication of the DF level of difficulty.

Acknowledgements

Records have been sourced from NatureSpot, the NBN Atlas and, of course, the Leicestershire & Rutland Environmental Records Centre (LRERC) who made available records from survey reports carried out as part of planning applications and historical recording. In addition, entomological publications, both local and national, have been scrutinised. I am grateful to the photographers contributing to NatureSpot (courtesy David Nicholls) for allowing use of their photographs as well as to individuals who have passed images to me for comment and, with a bit of luck, confirmation of identity.

References

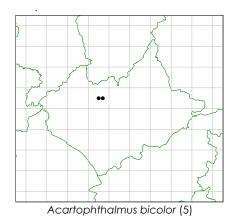
Morris, R. (2019). VC55 Diptera – a preliminary assessment. Leicestershire & Rutland Recorder, 15, 35-37.

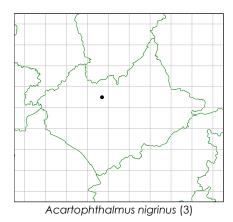
Morris, R. (2021a). The status of Diptera in VC55. Conopidae. LESOPS, 38.

Morris, R. (2021b). The status of Diptera in VC55. Tephritidae. LESOPS, 39.

Acartophthalmidae

It is no wonder that this family is overlooked! The flies are small, 1-2.5mm long, and are grey or black. There are few species of the single genus *Acartophthalmus* globally and only two have been recorded in Britain. A useful key to their identification was produced by Lonsdale (2009) including the two British species which have been recorded from the Buddon Wood area during survey work carried out by Andy Godfrey between 2011 and 2013. Difficulty 3.

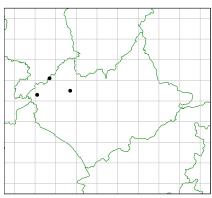


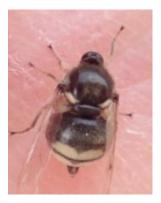


Lonsdale, O. (2009). Acartophthalmidae. http://tolweb.org/Acartophthalmidae/10629/2009.11.30 (contact RM for copy as link unreliable)

Acroceridae

These curious hump-backed flies are bee/wasp mimics that are parasitoids of spiders. Their appearance is unmistakable and the heads are relatively small in comparison to the abdomen. Of the three British species only one has been recorded in VC55. The most recent was when Uta Hamzaoui found one at The Chase, Charnwood Lodge NNR on 20 June 2020 with identity confirmed by Tony Irwin of Norwich Museum. Stubbs & Drake (2014) give more details of the family. Difficulty 1.





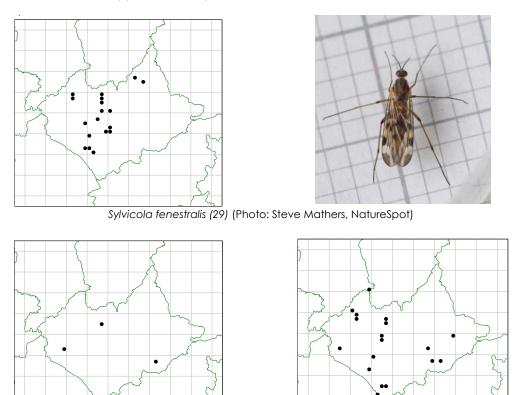
Acrocera orbiculus (5) photo Uta Hamzaoui

Stubbs, A.E & Drake, C.M. (2014). British Soldierflies and their allies. British Entomological & Natural History Society.

Anisopodidae

One of the primitive Nematocera families which has been around for some time having been found in fossilised tree resin – amber – from many part of the world. They seem to crop up at any time of the year seemingly being impervious to weather! All of this family in Britain are of the *Sylvicola* genus with three of the four species having been recorded in VC55. The

distribution of the three VC55 species is shown but many records (21) are only noted as the genus and thus not mapped. Difficulty 2-3.





Sylvicola punctatus (3)

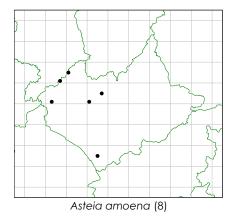
In amber (Smithsonian Natural History Museum)
Encyclopedia of Life (eol.org)

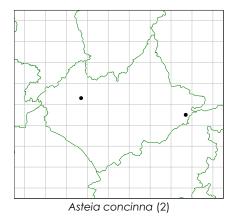
Identification keys at https://sites.google.com/view/mikes-insect-keys.

Sylvicola cinctus (6)

Asteiidae

Another fairly demanding fly family of small (<3mm) species requiring careful keying out for definitive identification (Chandler, 1978). Of the nine British species only two of the Asteia genus have been recorded in VC55 with no records previous to 2006. Nationally, both species seem to be spread evenly throughout England & Wales but only occasionally elsewhere. Difficulty 2-3.

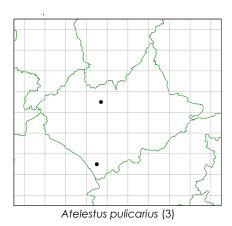




Chandler, P.J. (1978). A revision of the British Asteiidae. Transactions of the British Entomological & Natural History Society, 11, 23-24.

Atelestidae

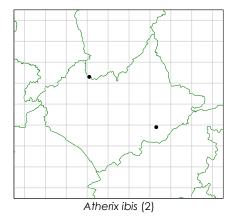
A family of small dark flies (3mm) with two British species one of which has been recorded in VC55. Requires some skill to recognise and identify. Very little is known of the biology of these flies but both sexes are known to swarm. At this time there seems to be no usable key but use of previously produced keys to the Empidioidea (in which the Atelestidae were originally placed) may well be helpful e.g. Chvála (1983). Difficulty 2.



Chvála, M. (1983). The Empidoidea (Diptera) of Fennoscandia and Denmark. II. General Part. The families Hybotidae, Atelestidae and Microphoridae. *Fauna Entomologica Scandinavica*, **12**: 1–279.

Athericidae

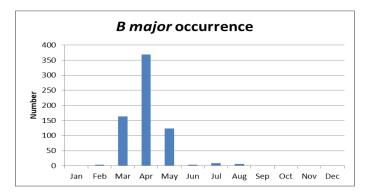
A family of three species in three genera in Britain with aquatic larvae. Originally included in the Rhagionidae, these "water snipe-flies" are distinguished from the Rhagionidae by the wing veins R1 and R2+3 fusing before or at the wing margin. Only Atherix ibis has been recorded in VC55. The first was recorded in June 1849 (Mosley, 1849) from near Hathern when egg clusters were found on hawthorn twigs above the Garendon Brook accompanied by adults. The occasion was noted by a WF Phillipps of Hathern with the identification apparently being achieved by John Westwood, a nationally recognised entomologist of the Victorian era. The second record for VC55 came in August 2007 from Leighfield Ponds, Rutland when spotted by a member of the Rutland Natural History Society. Identification is usually straightforward using Stubbs & Drake (2014) so it is surprising that there is a lack of records! Difficulty 1.

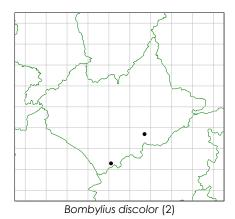


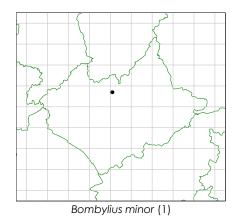
Mosley, O. (1849). On the economy of Atherix ibis. The Zoologist (series 1), **7**, 2586-2587. Stubbs, A.E. & Drake, C.M. (2014). British Soldierflies and their allies. British Entomological & Natural History Society.

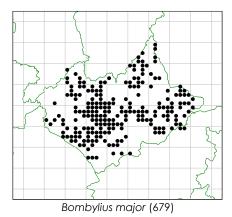
Bombylidae

Possibly the most recognisable harbinger of spring is the Dark-edge Bee-fly (Bombylius major) one of the ten members of this family and the most abundantly recorded in Britain. As a consequence, its occurrence in VC55 is, not unsurprisingly, widespread. Of the remaining species in the family only B. discolor (see note below) and B. minor have been noted. Both may be species moving northwards as the credible VC55 records have come in 2019 and 2020. Difficulty 1.











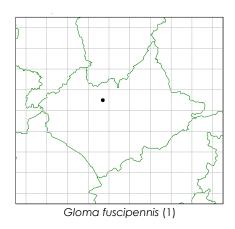
Mike Higgott (NatureSpot)

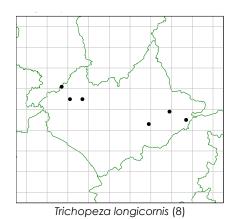
[Note: Crabbe mentioned the sparingly occurrence of Bombylius medius (now B discolor) although whether this identification was correct is unknown. Crabbe, G. (1795). The natural history of the Vale of Belvoir. In: J. Nichols, The history and antiquities of the county of Leicester, 1(1), 191-203].

Stubbs, A.E. & Drake, C.M. (2014). British Soldierflies and their allies. British Entomological & Natural History Society.

Brachystomatidae

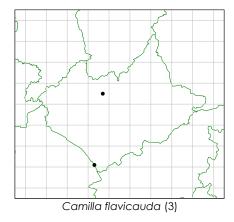
Originally included in the Empididae, this group of genera has now been elevated to family status in its own right (although this is still being disputed!). Nationally four species of three genera are recognised but only two have been recorded in VC55. To date no usable key has been uncovered for identification purposes. All records to date have come from highly experienced dipterists. The sole record of *Gloma fuscipennis* came in 2013 from Buddon Wood (Andy Godfrey) whilst the eight records of *Trichopeza longicornis* came from survey work in the north-west and east of the area. Difficulty not defined but best treated as an empid with difficulty 1-3.





Camillidae

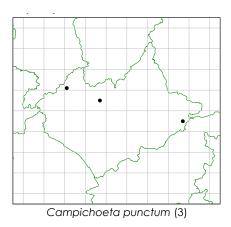
The members of this single British genus of five species are understandably under-recorded due to their very small size and the difficulty of identification. Only one species has been recorded from VC55 when Andy Godfrey found the fly at the Mountsorrel Quarry & Woods complex in 2011 & 2012 and again at Shawell in 2014. Difficulty 4.



Beuk, P. L. Th, & de Jong, H. (1994; modified 2010). The Dutch species of the Camillidae (Diptera) download from Online Identification Keys - Key to the Western European species of Camilla (Diptera: Camillidae). (online-keys.net)

Campichoetidae

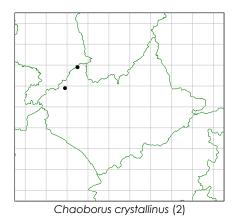
A small family with only two British species one of which (*Campichoeta punctum*) has been recorded from scattered localities in VC55. Separation of the two species can be done by physical characteristics although examination of male genitalia gives definitive identification (Chandler, 1986). It is closely related to the Diastatidae. Difficulty 2.



Chandler, P.J. (1986). The British species of Diastata Meigen and Campichoeta Macquart (Diptera: Drosophiloidea). Proceedings & Transactions of the British Entomological & Natural History Society, 19, 9-16. (Correction to figures in: Chandler, P.J. (1987) Proceedings of the Transactions of the British Entomological & Natural History Society, 20, 74.)

Chaoboridae

There are only six species in this family of "phantom midges" the larvae of which are aquatic. In some ways they resemble members of the Culicidae but need careful examination to establish identity. Accordingly, VC55 has 11 records eight of which are described as Chaoboridae/Chaoborus. Only two species have credible identification. The FSC gives some background to the ecology of this small family. Difficulty 1-3.

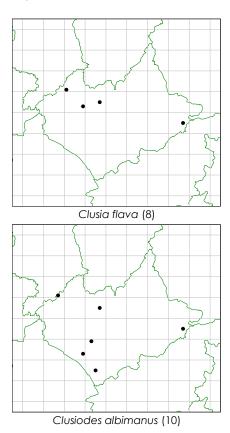


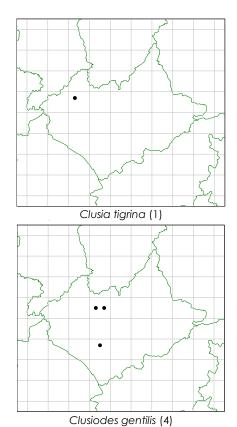


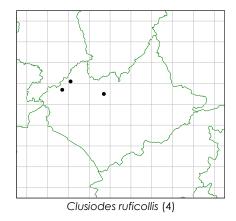
FSC https;//www.lifeinfreshwater.org.uk/Species%20Pages/Phantom%20midge.jpg.html. Identification key at https://sites.google.com/view/mikes-insect-keys.

Clusiidae

Five of the ten British species of these flies (<8mm) have been recorded in VC55 to date. Many early guides to their identification were, at best, confusing until Alan Stubbs produced a more organised key (Stubbs, 1982). The flies are rather elongated in appearance with often a definite cloud on the wing tip. Nearly all VC55 records have come from experienced entomologists. Difficulty 2.



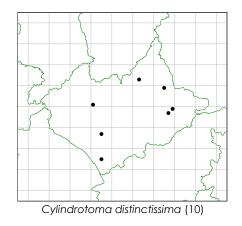


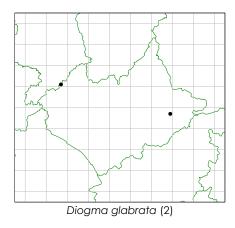


Stubbs, A.E. (1982). An identification guide to British Clusiidae. *Proceedings & Transactions of the British Entomological & Natural History Society*, **15**, 89-93.

Cylindrotomidae

A small family of four species of which only two have been recorded in VC55. The Cylindrotomidae are closely related to other crane-fly like species (Tipuloidea) and are easily identified (Stubbs, 2021). Difficulty 1.





Stubbs, A.E. (2021). British Craneflies. British Entomological & Natural History Society.

Diadocidiidae

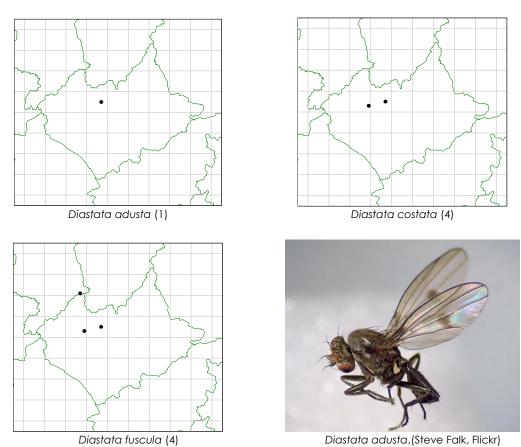
Small, brownish-yellow, delicate nematoceran flies with a hunched aspect. Of the three British species only one has been recorded in VC55 from two Wildlife Trust nature reserves (Great Merrible Wood 1985; Dimminsdale 2015).



Hutson, A.M et al (1980). Mycetophilidae (Bolitophilinae, Ditomyiinae, Diadocidiinae, Keroplatinae, Sciophilinae & Manotinaw), Diptera Nematocera. Handbooks for the Identification of British Insects, **9**(3), 1-111.

Diastatidae

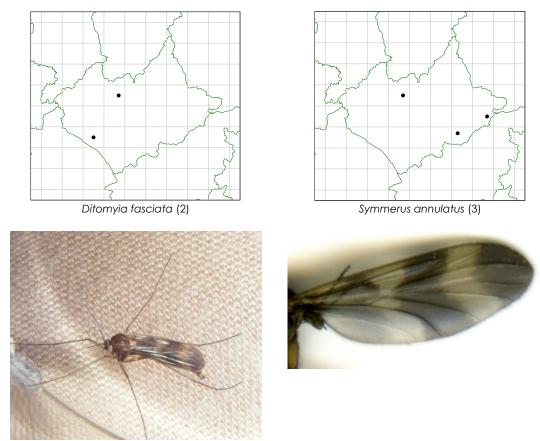
A small family with only six British species three of which have been recorded in VC55. Separation of the species can be done by physical characteristics although examination of male genitalia gives definitive identification (Chandler, 1986). The family is closely related to the Camphoetidae. Difficulty 2.



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

Ditomyiidae

Medium-sized Nematocera where the larvae inhabit bracket fungi and dead wood. Only three British species of which two have been found in VC55. Difficulty 3.

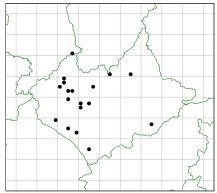


Ditomyia fasciata (Burbage Wood 2011; Graham Calow (NatureSpot) identified by John Kramer,

Hutson, A.M. et al (1980). Mycetophilidae (Bolitophilinae, Ditomyiinae, Diadocidiinae, Keroplatinae, Sciophilinae & Manotinae), Diptera Nematocera. Handbooks for the Identification of British Insects, 9(3), 1-111.

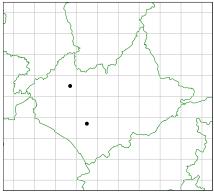
Dryomyzidae

The three members of this family are readily identified through a combination of the presence/absence of setulae (bristles) on the R1 vein and the presence/absence of cross-vein shading. Until 2020, only one species, *Dryomyza anilis*, had been recorded in VC55. A second species, *Dryope decrepita*, was discovered at Charnwood Lodge NNR in November 2020 by Margaret McLoughlin. The family tends to be associated with moist habitats, the larvae developing in rotting vegetation, particularly fungi. A record of *D. anilis* in 1926 was listed by the NBN Atlas (May 2021) being sourced from the Nottinghamshire Biological & Geological Records Centre but no further details as yet. Difficulty 1.





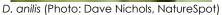
Dryomyza anilis (25) (Photo: Paul Ruddoch, NatureSpot)

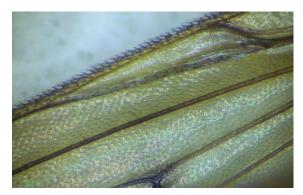




Dryope decrepita (1)(Photo: Margaret McLoughlin)





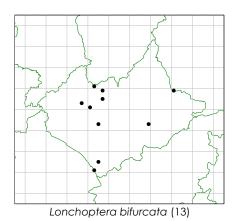


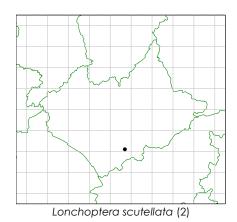
D. decrepita (Photo: Margaret MCloughlin)

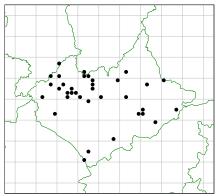
Falk, S.J. (2005). The identification and status of Dryomyza decrepita Zetterstedt (Diptera. Dryomyzidae). Dipterists Digest, 12, 7-12.

Lonchopteridae

Small yellow to black bristly flies with wing venation slightly different in the sexes. Of the seven British species five have been recorded in VC55 although one, Lonchoptera lutea is by far the most commonly encountered. L. scutellata is regarded as being nationally scarce (Natural England, 2018). This was discovered at Saddington Reservoir in 2009 and 2010 by national recorder Keith Alexander. Difficulty 2.

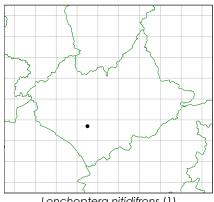


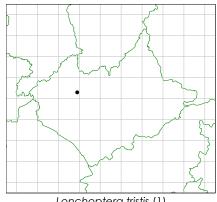






Lonchoptera lutea (60) (photo Mike Higgott, NatureSpot)





Lonchoptera nitidifrons (1)

Lonchoptera tristis (1)

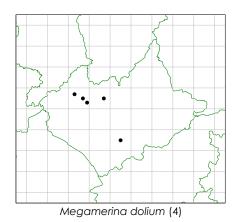
Natural England (2018). A review of the status of Lonchopteridae, Platypezidae and Opritidae flies of Great

Britain. NECR 246.

Smith, K.G.V. (1969). Diptera: Lonchopteridae. Handbooks for the Identification of British Insects, 10 (2a). Royal Entomological Society.

Megamerinidae

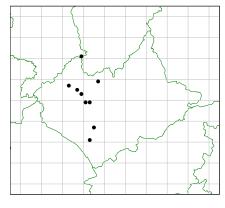
Only one species of this family is known in Europe. Whilst mostly limited to southern Britain it has been recorded in VC55. PAH Muschamp found the fly at Wistow on 03/09/1931 (identified by ECM d'Assis-Fonseca) with two well-labelled examples present at the County Resources Collections. The fly was not reported again until 2000 when visiting Dipterist Forum members found it at Charnwood Lodge NNR. Further records came from Grace Dieu (2011) and Ulverscroft (2012) and in 2011 from Rowhele Wood during survey work at Buddon Wood and its environs. Chandler (1975) described the fly with notes on its distribution at that time. Difficulty 1.



Chandler, P.J. (1975). Notes on the British status of three unusual acalyptrate fles (Diptera). Proceedings of the British Entomological Natural History Society, **8**, 66-72.

Micropezidae

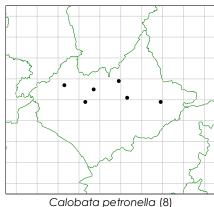
Flies of this family can be recognised by their narrow shape and, often, long slender legs. They are reluctant to fly and have a characteristic gait when walking, hence their common name of Stillt & Stalk flies. The DF lists five genera of 10 species although some species have few national records. The DF operates a Recording Scheme with occasional Newsletters offering guides on identification of both British and European species. Of the ten species in the family VC55 has records for six. Difficulty 2.

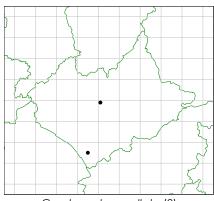


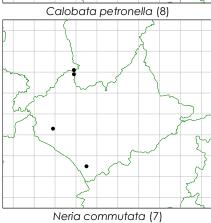


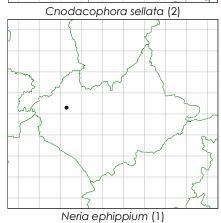
Neria cibaria (14)

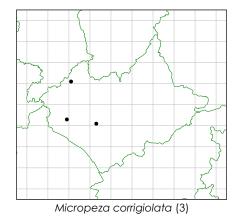
Neria cibaria (Graham Calow, NatureSpot)







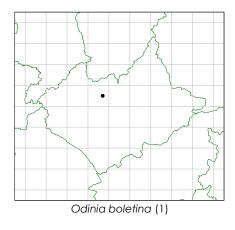


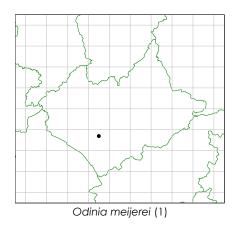


Collin, J.E. (1945). British Micropezidae (Diptera). Entomologists Record & Journale of Variation, **57**, 115-119. Drake, C.M. (2003). Neria femoralios (Meigen, 1826) (Diptera, Micropezidae) new in Britain. Dipterists Digest, **10**, 55-57.

Odiniidae

These woodland flies may well be under-recorded as they need careful examination to establish identity. Nine species are listed for Britain but only two have been recorded in VC55 both as singletons: Odinia meigerei was noted at Narborough Bog NR when raised from larvae from diseased elm bark in 1977 (Lewis, 1979) while O. boletina was found while surveying the Mountsorrel Quarry-woods complex by Andy Godfrey in 2011. Difficulty 2-3.

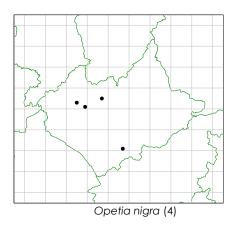




Lewis, D.C. (1979). The larva and puparium of *Odinia meijerei* Collin (Dipt., Odiniidae). *Entomologists Monthly Magazine*, **114**, 233-235.

Opetiidae

A family with only one species, Opetia nigra. A small fly with a characteristic wing venation. The family has a geological presence! Difficulty 2.



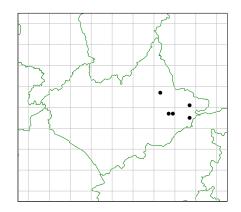


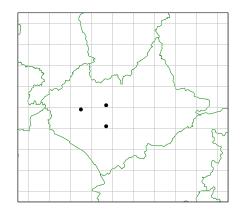
Wing venation (Amorim et al, 2018)

Amorim, D De Souza, Silva, V.C. & Brown, B.V. 2018. *Puyehuemyia chandleri*, gen nov, sp nov (Diptera, Opetiidae): remnant of a Cretaceous biota in Chile. *Am Museum Novitats* **3829**, 1-27. (includes notes on *Opetia nigra*).

Platystomatidae

One of the families known as picture-wing flies with only two species in two genera, both recorded in VC55. Easily recognised by wing pattern (Clements, 1990). Difficulty 1.









Platystoma seminationis (6) Dave Nicholls (NatureSpot)

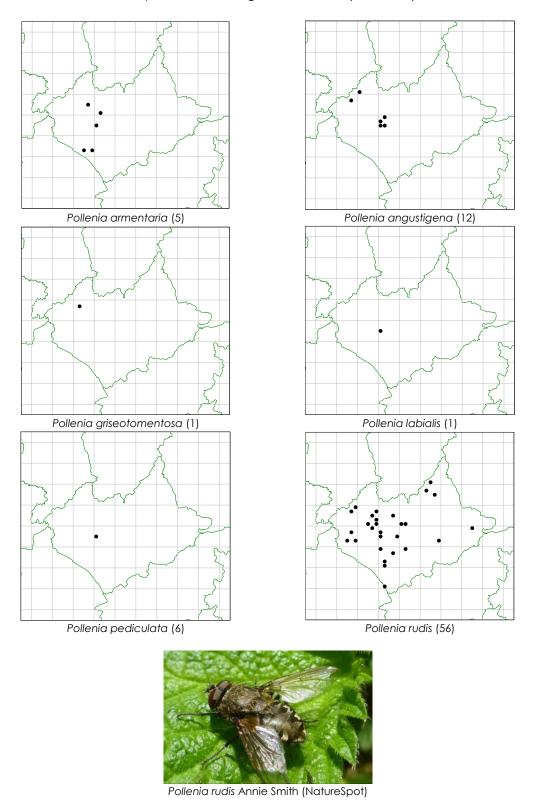
Rivellia syngenesiae (5) David Gould (NatureSpot)

Clements, D. K. (1990). Provisional keys to the Otitidae and Platystomatidae of the British Isles. *Dipterists Digest* (Series 1), **6**, 32-43.

Polleniidae

Originally included in the Calliphoridae, the "Cluster-flies" (Polleniidae) have been elevated to family status. The single genus *Pollenia* has eight species of which six have been recorded

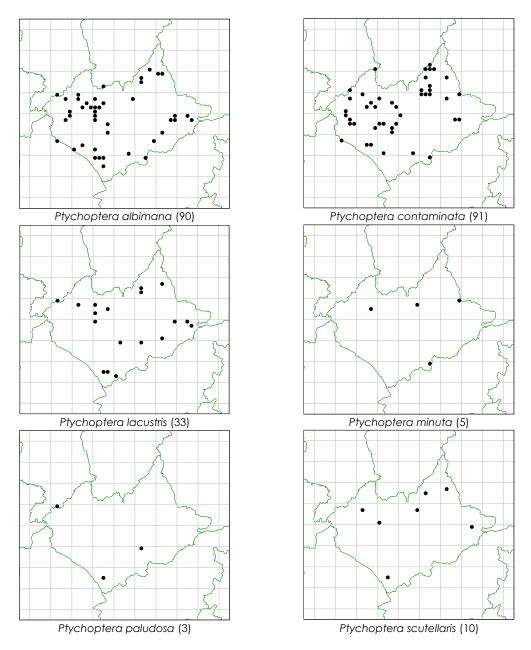
inVC55. Two species are known from only single records whilst *Pollenia rudis*, the commonest in the area, was in the Leicester volume of the Victoria County History (1907). *P. pediculata* has only been recorded in a Ratby garden (David Nicholls) during the spring and autumn of 2020. A guide to the visual separation of the species can be found on NatureSpot and a recent draft key by Steven Falk no doubt encouraged increased recording. In 2021 Olga Sivel produced a RES Handbook for the Calliphoridae including the Polleniidae (Sivel, 2021).



Sivell, O. (2021). Blow flies (Diptera: Calliphoridae, Polleniidae, Rhiniidae). Handbooks for the Identification of British Insects, 10 (16). Royal Entomological Society.

Ptychopteridae

While these flies are superficially similar to tipulids they are not related evolutionarily. They can be readily distinguished from tipulids of the same size (8-15mm) having black abdomens, sometimes with orange patches, which do not occur in tipulids of a similar size. There are only seven British species of which six have been found in VC55. The original key, as part of the RES Handbook series by Freeman (1950) has been clarified and somewhat simplified by Stubbs (1993).



Freeman, P. (1950). Ptychopteridae. Handbooks for the Identification of British Insects, 9 (2). Royal Eentomological Society.
Stubbs, A.E. (1993). Provisional atlas of the ptychopteroid craneflies (Diptera: Ptychopteridae) of Britain and

Ireland. BRC, Monkswood.

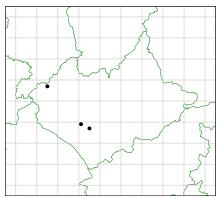


Ptychoptera albimana (Graham Calow, NatureSpot)

Ptychoptera contaminata (David Gould, NatureSpot; pair in cop)

Rhiniidae

Originally included in the Calliphoridae, this family, in Britain, is represented by a single species, Stomorhina lunata of which three records have been noted for VC55 to 2020. The fly is readily identified using the latest keys (Sivell, 2021) with a noticeably protruding lower face. Difficulty 1.



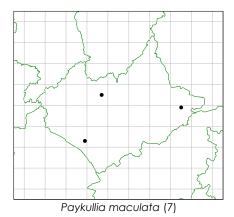


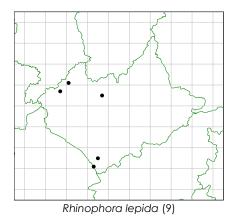
Stomorhina lunata (3) Photo David Gould, NatureSpot

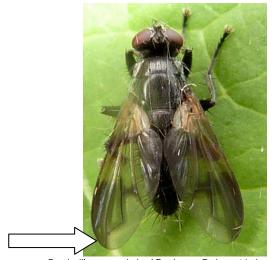
Sivell, O. (2021). Blow flies (Diptera: Calliphoridae, Polleniidae, Rhiniidae). *Handbooks for the Identification of British Insects*, **10** (16). Royal Entomological Society.

Rhinophoridae

This calyptrate family of small bristly flies has seven species in six genera of which only two having been noted in VC55. Separation from other calyptrate families is easily achieved using Sivell (2021) with vein M_1 ending with a petiole (arrow in photo). Parasitoids on woodlice. Difficulty 2.





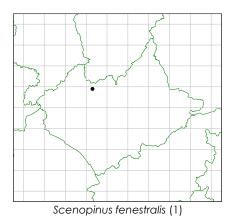


Paykullia maculata (Graham Calow, NatureSpot)

Sivell, O. (2021). Blow flies (Diptera: Calliphoridae, Polleniidae, Rhiniidae). *Handbooks for the Identification of British Insects*, **10** (16). Royal Entomological Society.

Scenopinidae

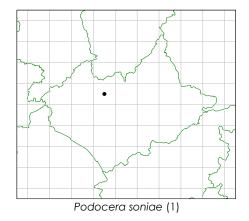
A family of only two species in Britain with only a single VC55 record of one, Scenopinus fenestralis. This species is often found on windows indoors hence its popular name of "window fly". Difficulty 1.



Stubbs, A.E & Drake, C.M. (2014). British Soldierflies and their allies. British Entomological & Natural History Society.

Stenomicridae

This small family of minute flies, of just three species in two genera, requires careful determination to establish identity. Indeed, a single female *Podocera soniae*, recorded by Andy Godfrey at Buddon Wood in 2012 is, apparently, still the only British record of this European species (Godfrey, 2018). The same publication also reported on a retrospective record of *P. delicata*, again by AG, from Holwell Mouth in 2001. Difficulty 3.

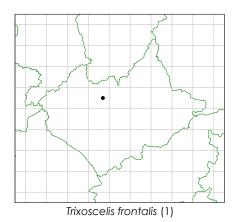




Godfrey, A. 2018. Podocera soniae (Merz & Rohacek) (Diptera, Stenomicridae) new to Britain. Dipterists Digest, 25, 65-66.

Trixoscelididae

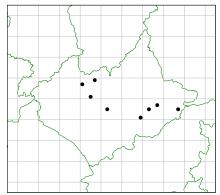
A small family of only five British species in a single genus, *Trixoscelis*, originally included in the Heleomyzidae. These small grey or brownish flies are probably over-looked in VC55 although an excellent identification key is available (Chandler & Drake, 2015). It was found during survey work at Buddon Wood by Andy Godfrey in 2012.



Chandler, P.J. & Drake, C.M. (2015). *Trixoscelis canescens* (Loew) (Diptera, Trixoscelididae) in Britain. *Dipterists Digest*, **22**, 147-153.

Xylomyidae

Only one of the three members of this family, also known as Wood-Soldierflies. has been found in VC55. They may be mistaken for true Stratiomyidae (Soldierflies) but are readily identified (Stubbs & Drake, 2014). Difficulty 1.

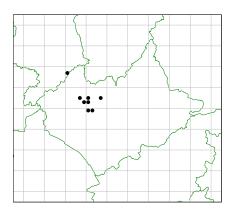




Solva marginata (10) (Photo: Peter Smith, NatureSpot)

Stubbs, A.E. & Drake, C.M. (2014). British Soldierflies and their allies. British Entomological & Natural History Society.

Xylophagidae



The Awl-flies (Xylophagidae) resemble members of the Rhagionidae (Snipe-flies) and is so-named because of the shape of the larval head. Identification using Stubbs & Drake (2014). Difficulty 1.

Stubbs, A.E. & Drake, C.M. (2014). British Soldierflies and their allies. British Entomological & Natural History Society.

Leicestershire Entomological Society Occasional Publications Series (LESOPS) covering (a) detailed studies of insects and other invertebrates carried out by Society members and

(b) matters of historical entomological interest to VC55 Leicestershire & Rutland

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