

LEICESTERSHIRE & RUTLAND ENTOMOLOGICAL SOCIETY

The status of Diptera in VC55

Calliphoridae, Fanniidae & Simuliidae



Stomorphina lunata (Calliphoridae)
David Gould, NatureSpot



Fannia lustrator (Fanniidae)
Graham Calow, NatureSpot

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LESOPS 59 (September 2023)

ISSN 0957 - 1019

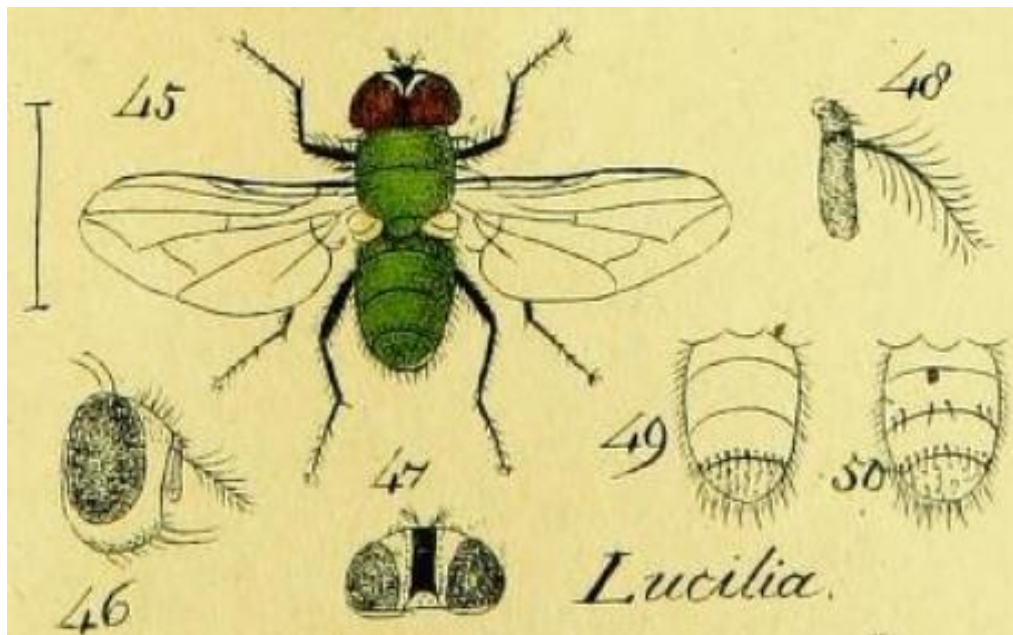
This LESOPS continues the review of the Diptera found in Leicestershire & Rutland up to 2020 with the aim of encouraging recording of the less commonly examined fly communities of our area.

Calliphoridae

Introduction

The Blowflies of the Calliphoridae family, along with the Sarcophagidae (LESOPS 60), are important ecologically in that their larvae are very effective at removing nearly all traces of dead vertebrate remains, including those from humans. Indeed, the larval stages are regularly used forensically to estimate, with remarkable accuracy, the time of death such that keys have been produced to ensure correct identity of any found e.g. Sharma *et al* 2015; Szpila, 2023). However, for those interested in determining the species associated with local areas, the emphasis has been predominantly concentrated on the identification of the adult flies.

The Calliphoridae was originally included in the Muscidae such that early records from VC55 (VCH-L, 1907) list them along with others perceived to be from this original family. Certainly members of the family have been recognised for some time with illustrations appearing in 19th century publications (e.g. Meigen & Loew, 1838; figure).

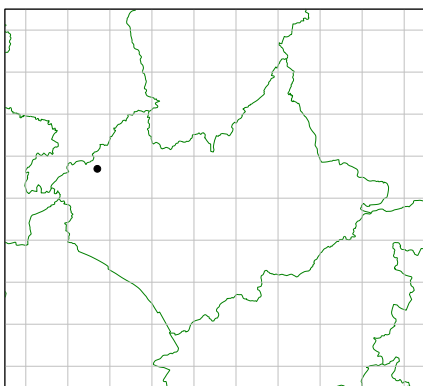


The establishment of a recording group by the Dipterists Forum has resulted in the publication of the most up-to-date guide to the Calliphoridae in Britain (Sivell, 2021). Reference is given to earlier keys to the British species and there is an extensive consideration on how to arrive at correct identities. Of particular value are the detailed descriptions of the British species following a standard pattern for each. This is the current key that should be used to pursue Calliphoridae surveying in Leicestershire & Rutland. The use of facial photographs is particularly useful

It should be noted that taxonomic changes have resulted in the Rhinophoridae being returned to the Calliphoridae in the latest British listing (DF, 2023) where they appear as the Rhiniinae resulting in these species not appearing in Sivell (2021). This LESOPS has adopted the current listing which has resulted in the following genera being added to the Calliphoridae – *Melanophora*, *Paykullia*, *Phyto*, *Rhinophor*, *Stevenia* and *Tricogena*. Identification of these stages is facilitated by Mike Hackston's online keys based on previously publications (Hackston, 2019).

Annotated list of VC55 Calliphoridae

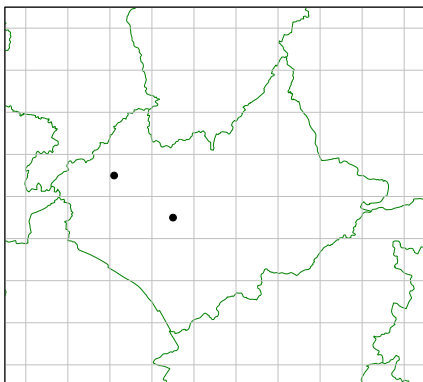
Currently there are 39 species on the British list of which 17 have been noted in VC55 as of 2020.



Bellardia vulgaris Robineau-Desvoidy (1 record)

Found in southern England, much of Wales and in the Scottish Highlands. A few records from the Norfolk coast but scarce elsewhere in England. Genitalia examination is necessary for correct identification.

Andy Godfrey found the fly when surveying a former aquatic plant nursery at Ashby de la Zouch in August 2018.



Calliphora subalpina Ringdahl (3 records)

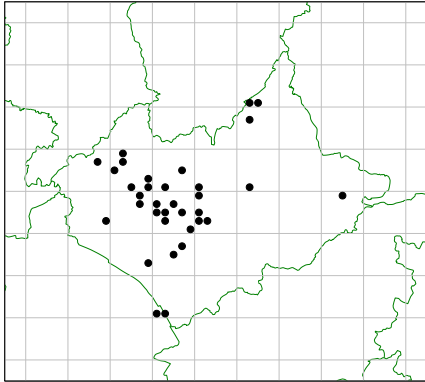
Scattered throughout much of Wales, northern England and in Scotland especially the Highlands. Good quality photographs may allow identification of this species.

Denis Owen deposited a specimen from "Leicester" into the British Natural Museum Collections (ref: BMNH(E)903963) taken in September 1979 but with the actual location not given (possibly from the Scraftoft Lane malaise trap?). Since found by Andy Jukes during survey work in the Swannington area in 2019

Calliphora vicina Robineau-Desvoidy (82 records)

Found throughout Britain even in Orkney & Shetland. Body is metallic blue with identification possible using good quality photographs.

Noted by W.A. Vice in the Blaby area in 1883 (CRC 44/3/2B/9) and also in 1886 and 1889. No further records have been located until 2006 during a project assessing the entomology of reed beds at Thorpe Satchville sewage by Ian Merrill. Regularly seen through much of Leicestershire but only from an Empingham garden in Rutland (Andrew Dejardin) so far.

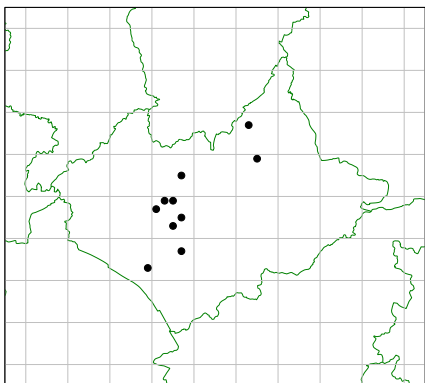


Ratby, 2008
(Dave Nicholls, NatureSpot)

Calliphora vomitoria Linnaeus (12 records)

Found across Britain. Another of the metallic blue species with facial features aiding identification.

A specimen taken by Vice is in the County Collections dated 1893 (CRC 44/3/3A/6) with the Rutland volume of the Victoria County History noticing its occurrence but with no details. The County Collections have a 1964 specimen which may have been found in the Biology Section of Leicester Museum but the record is incomplete (CRC 33/3/3A/12). Occasionally recognised since 2005.

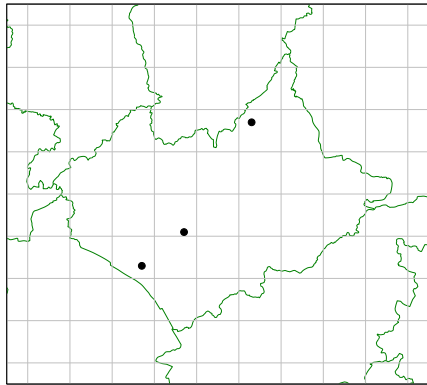


Melton CR 2016
(Paul Ruddoch, NatureSpot)

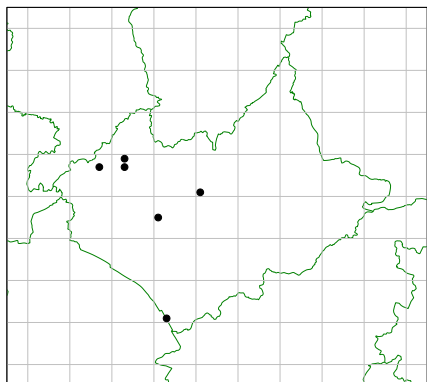
Cynomya mortuorum Linnaeus (3 records)

Occurs throughout Britain being one of the species with forensic usefulness. Facial features tend to look golden.

First noted by Graham Calow in 2009 at the M69 junction near Sapcote. Since seen at Long Clawson (2015, Barbara Cooper) and at the Spearwort Fields, Aylestone (2019, David Gould). Recognisable by its yellow face.



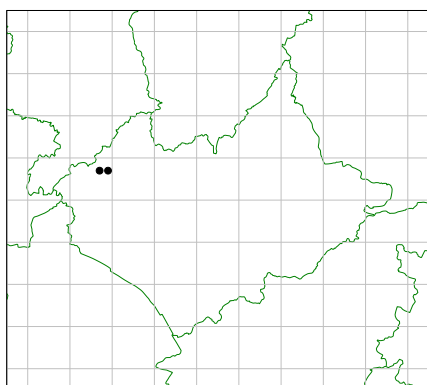
Sapcote (M69), 2009
(Graham Calow, NatureSpot)



Lucilia ampullacea Villeneuve (6 records)

Scattered in England & Wales and northern Scotland. One of the green-coloured members of the family.

Three of the records came in 2011 with two from the Grace Dieu complex by Steve Woodward and Helen Ikin. Not seen again until 2018.



Lucilia bufonivora Moniez (2 records)

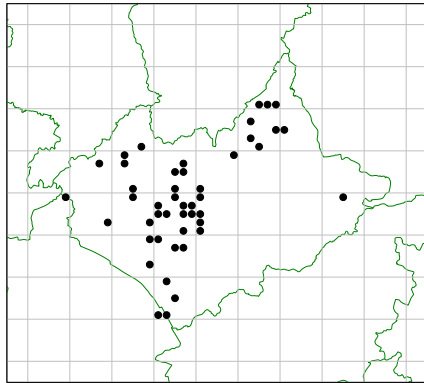
Scattered in England & Wales. Another of the green-bodies species which should be recognisable from a good photograph.

In VC55 it was bred from toads by E. Oldham in 1982 from the colony at Coleorton - two specimens in the County collections (CRC 44/3/5B/1-2). Andy Jukes recorded the fly at the Lounge disposal site in 2020.

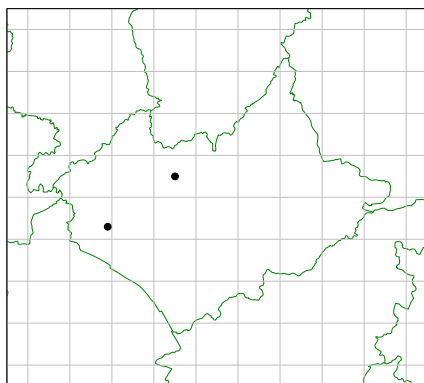
Lucilia caesar Linnaeus (78 records)

Present through much of Britain. Sivell (2021) recommended genitalia examination to be certain of identification.

However, assuming identifications are valid, the fly seems to be common in Leicestershire but under-recorded in Rutland. Despite the County Collections having 54 specimens there is only one originating from VC55 – Thurmaston 1908 by E.E. Lowe (CRC 44/3/5C/8).



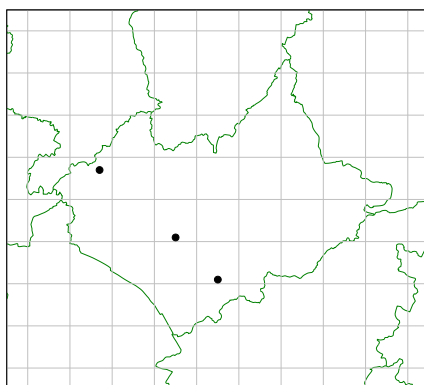
Sapcote, 2009
(Graham Calow, NatureSpot)



Lucilia illustris Meigen (2 records)

Scattered through England & Wales and parts of Scotland. Requires careful examination to ascertain identity.

The County Collections has a specimen taken at Woodhouse in 1897 (possibly by Vice, CRC 44/4/1A/11). Not recorded again until survey work at Sedgemoor, Market Bosworth by Richard Wright in spring 2011. This latter site is now a housing estate.



Lucilia richardsi Collin in Richards (3 records)

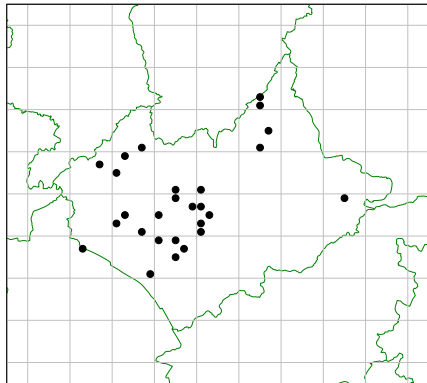
Most national records come from scattered locations in England. Good photographs should allow identification although care is still needed.

Caught at Saddington in 1897 with a specimen in the County Collections (CRC 44/4/1B/3) but with no recorder details. A further record came from Braunstone (VCH-L, 1907). It was more than a century later that Colin Plant noted the fly at the former coal site at Lounge in late summer 2012.

Lucilia sericata Meigen (48 records)

A species that is widespread across Britain. Good photographs should allow identification although care is still needed.

Recorded from Cropston and Blaby in the VCH-L (1907) with no specimens in the County Collections. Regularly seen since 2011 at numerous locations.

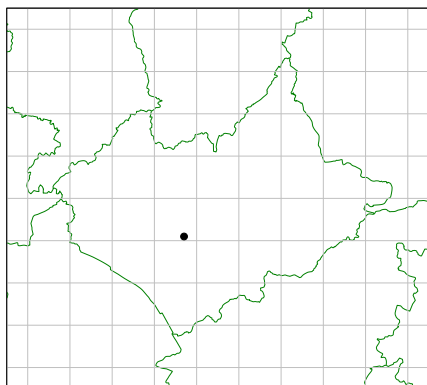


Everards Meadow, Enderby 2019
(David Gould, NatureSpot)

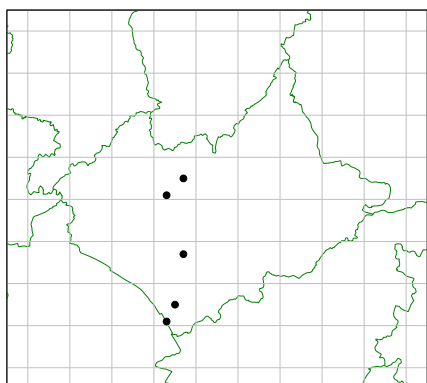
Lucilia silvarum Meigen (3 records)

One of the green-bottles found across much of Britain in scattered localities. Good photographs should allow identification although care is still needed.

Noted by Vice at Braunston (Leicester) in the 19th century (VCH-L, 1907) and then in the same area over a hundred years later (2020) by David Gould who also took it at The Spearwort Fields at Aylestone.



Spearwort Fields, Aylestone, 2020
(David Gould, NatureSpot)



Melanomya nana Meigen (9 records)

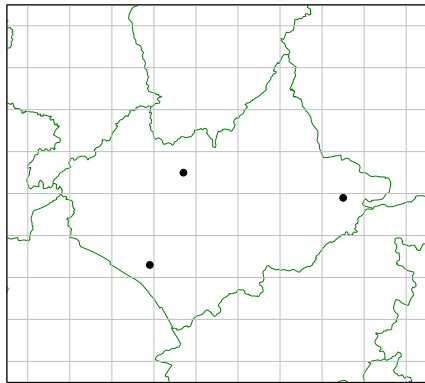
Common across England & Wales but less so in Scotland. Microscopic examination aids identification.

The County Collections have two specimens from the Blaby area in 1883 (CRC 44/4/2B/4) and the Bradgate area in 1884 (CRC 44/4/2B/3). The other VC55 records came during survey work at the Mountsorrel Quarry complex in 2011-2013, Shawell Quarry 2014 and the Misterton Marsh SSSI area in 2018.

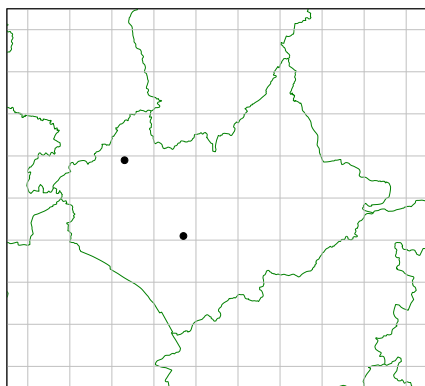
Paykullia maculata Fallén (6 records)

Originally classified as one of the Rhinophoridae but now in the Calliphoridae. Does not appear in Sivell (2021). Identification using Hackston (2019). Scattered across much of Britain.

First noted in VC55 during the Mountsorrel Quarry complex surveys by Andy Godfrey (2011-2012). Since noted several times since (2014-2017) at Sapcote (Graham Calow with identifications by national experts) and by Andrew Dejardin at Empingham in 2017.



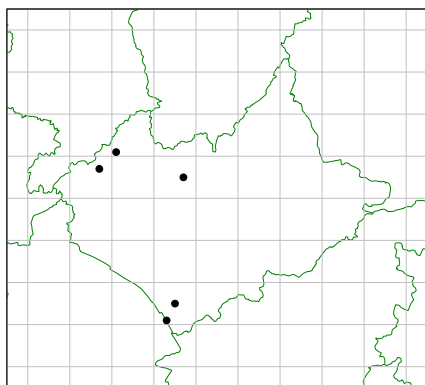
Sapcote, 2015
(Graham Calow, NatureSpot)



Protophormia terraenovae Robineau-Desvoidy (2 records)

Occurring throughout Britain. Can be recognised from well-taken photographs.

Only two local records. Noted during survey work at the Grace Dieu complex by Helen Ikin & Steve Woodward in 2011. The only other record to date came from The Spearwort Fields, Aylestone when seen by David Gould in 2017.



Rhinophora lepida Meigen (12 records)

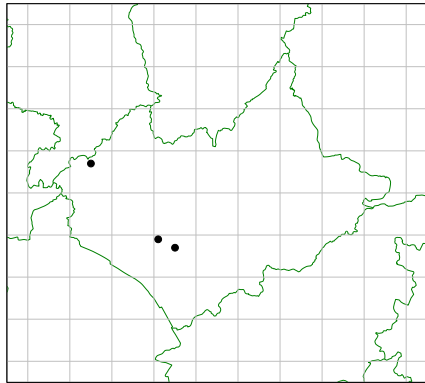
Originally in the Rhinophoridae with identification using Hackston (2019). Widely distributed in England & Wales.

All VC55 records were as a result of surveys carried out by entomological experts -

Stomorphina lunata Fabricius (3 records)

Predominantly noted in England, Quite well marked for a member of the Calliphoridae with the eyes showing a striped pattern in live flies.

VC55 records have only appeared since 2017 when taken at Narborough Bog NR by David Gould (confirmed by Steve Falk) then, in 2020 at Prestop Park Woods (Ashby de la Zouch) by Linda Fenwick and by Ted Gaten at Thurlaston,



Narborough Bog NR, 2017 ♂
David Gould, NatureSpot

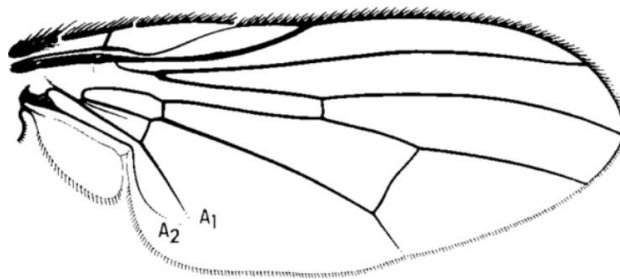
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Fanniidae

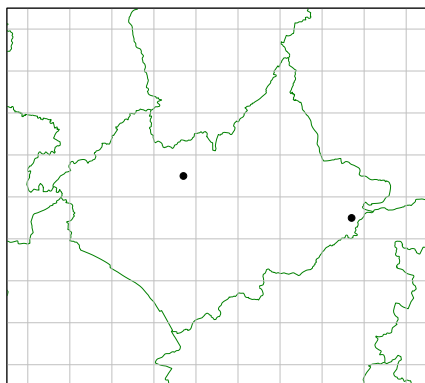
A calyptrate family with 61 species from two of the three European genera currently on the British list (DF, 2023) with just nine having been recorded in VC55. The lack of a national study group emphasises that the family is relatively poorly studied compared with other flies with DF classing them as being levels 2-3 in difficulty to identify. Some Fanniidae are associated with human habitation and activities with females often being attracted to decaying materials while males are not so inclined.

Wing venation is characteristic in that the two anal veins tend to converge (figure). In addition these flies lack any hypopleural bristles and the lower squama are usually larger than the upper ones. Separation into the two British genera is easy as those with plumose arista are *Piezura* and the remainder *Fannia*. The flies are small (2-5mm occasionally to 9mm) and need careful keying out to assure correct speciation.



Keys to identification of the British species initially came from d'Assiz-Fonseca (1968) with an update in 2021 (Hackston, 2021). A detailed guide to the European species came from Rozkošný *et al* (1997) with a consideration of males coming from Bartak *et al* (2016). A further European article examined the taxonomy of the larvae of this groups of flies (Lyneborg, 1970). Some species are a pests in agricultural situations especially in poultry populations (Murillo *et al* 2021).

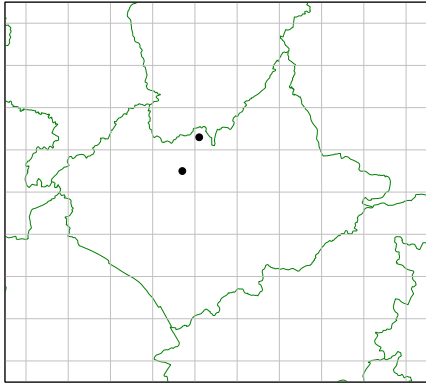
Nearly all records of the Fanniidae in Leicestershire & Rutland came as a result of survey work by experienced entomologists.



Fannia armata Meigen (5 records)

Found throughout England & Wales into Scotland. Male hind tibia covered with long and dense ventral hairs.

First noted by Jonathan Cole at Ketton Quarry NR in 2006. Andy Godfrey observed this fly at the Mountsorrel Quarry complex in 2012 and 2013 with further records coming from Buddon Wood in 2013.



Fannia canicularis Linnaeus (2 records)

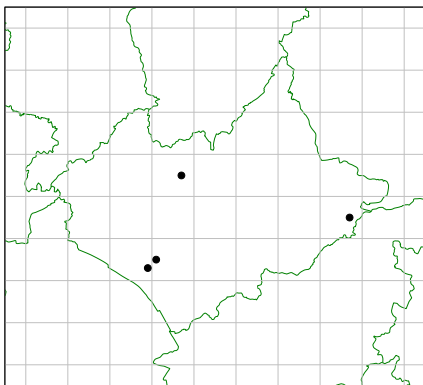
Found across the southern half of Britain with scattered records elsewhere. The male scutum has a median brownish stripe.

The fly was found at Wymeswold by Lorraine Elliston in 2008 although there is no record of how the identification was achieved. The only other record came during the 2012 Mountsorrel Quarry complex survey being carried out by Andy Godfrey.

Fannia lustrator Harris (6 records)

A similar distribution to the previous species. The male middle and hind femora are yellow.

Noted at Ketton Quarry NR by Jonathan Cole in 2006 as well as at the Mountsorrel Quarry complex by Andy Godfrey in 2011 and 2012. Graham Calow contributed records from the Sapcote area in 2014 with a further sighting from Croft in 2020 with identifications by Stephane Lebrun.

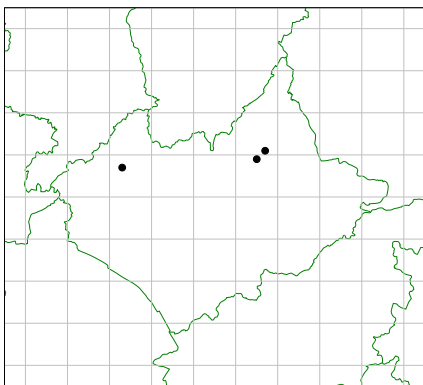


Sapcote 2014 ♂
Graham Calow (id Stephane Lebrun)

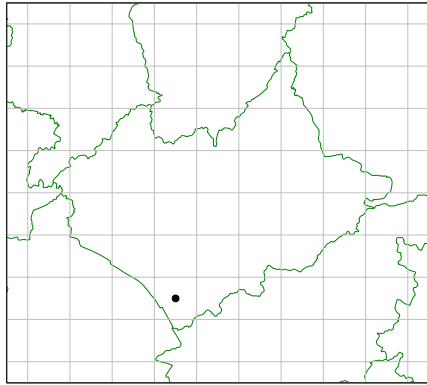
Fannia mollissima Haliday (5 records)

Recorded at scattered locations throughout much of Britain.

First noted by Steve Woodward & Helen Ikin (identification by Jonathan Cole) during research into the natural history of the Grace Dieu complex in 2012 (Woodward & Ikin, 2022) with all other VC55 records coming from the Country Park at Melton Mowbray by Paul Ruddoch during 2016.



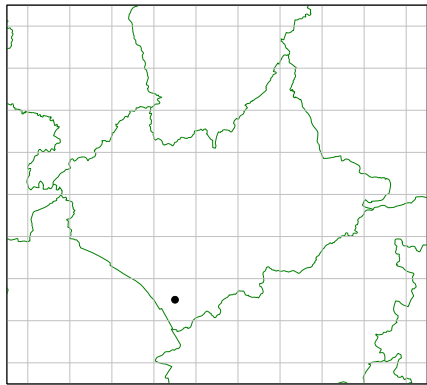
Melton CP 2016
Paul Ruddoch, (id Malcolm Storey)



Fannia pauli Pont (1 record)

Relatively infrequently recorded from across Britain.

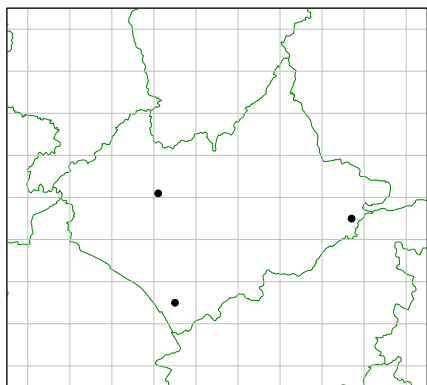
The only VC55 sighting came from the vicinity of veteran lime trees during the 2018 survey of the Misterton Marshes complex by David Gibbs.



Fannia postica Stein (2 records)

Scattered across much of Britain.

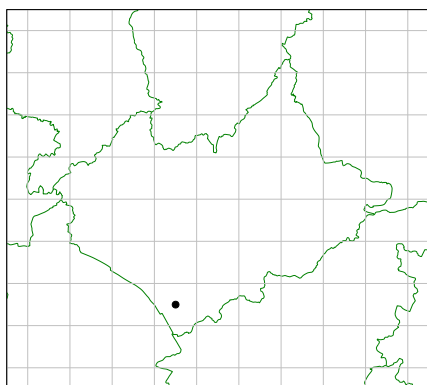
The only local records of this species came from David Gibbs during the 2018 survey of the Misterton Marshes complex.



Fannia serena Fallén (7 records)

One of the more commonly recorded of the genus found across much of Britain.

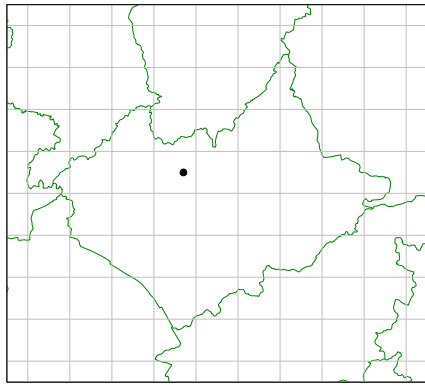
First seen in VC55 in 2006 when recorded by Derek Lott (Lea Meadow NR) and Jonathan Cole (Ketton Quarry NR). All other records came from David Gibbs during the Misterton Marshes complex survey of 2018.



Fannia similis Stein (1 record)

Mostly recorded across England & Wales less so in Scotland.

The only local record came from adjacent to the R Swift during the Misterton Marshes complex survey by David Gibbs in 2018.



Piezura graminicola Zetterstedt (1 record)

The relatively few records of this species in Britain come from scattered locations.

The only sighting of this fly came during Andy Godfrey's survey of the Mountsorrel Quarry complex in 2011.

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SIMULIIDAE

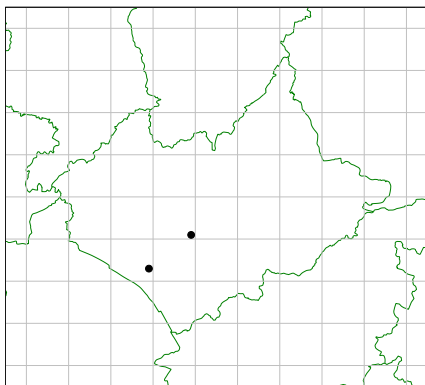
The “Blackflies” occur across the globe (>2,000 species) with *Simulium* species the most important of the family as many act as disease vectors. Adult flies are quite small (<4mm with few larger) and, when viewed from the side, have a humped-back appearance. Unfortunately for the amateur these flies are difficult to identify with current keys being severely outdated. Even so the most useful, despite being over 50 years since its publication, is that of Davies (1968) although there have been name changes since some of which were listed by Crosskey (1991). Currently the Dipterists Forum (July 2023) lists 35 British species of three genera with the majority being members of the *Simulium* grouping. Only seven species (all of the *Simulium* genus) have been noted in VC55 to 2020.

Annotated list of VC55 species

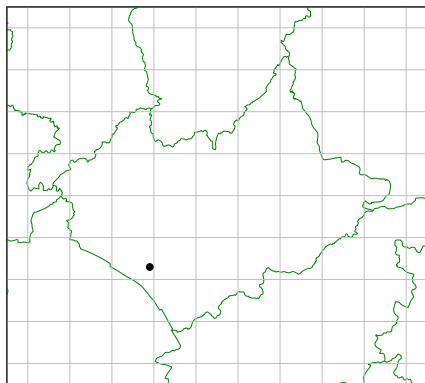
Simulium angustipes Edwards (2 records)

Found scattered over England & Wales.

The two local records came from NatureSpot contributors – Sapcote, 2014 by Graham Calow and Knighton (Leicester) 2018 by Alan Cann.



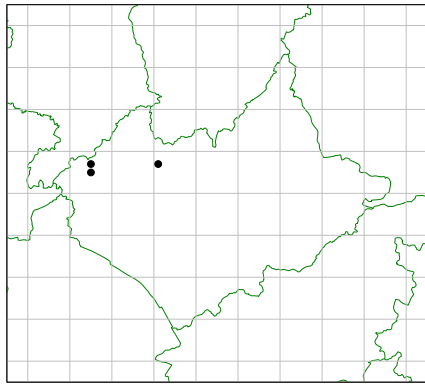
Sapcote, 2014
Graham Calow , NatureSpot



Simulium angustitarse Lundström (1 record)

Scattered across England & Wales with most from the latter,

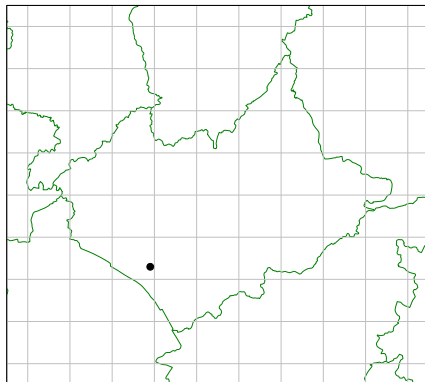
The single VC55 record came from Graham Calow at Sapcote in 2016 with identification by Tony Irwin of Norwich Museum.



Simulium cryophilum Rubtsov (3 records)

Most records come from Wales while being scattered in England.

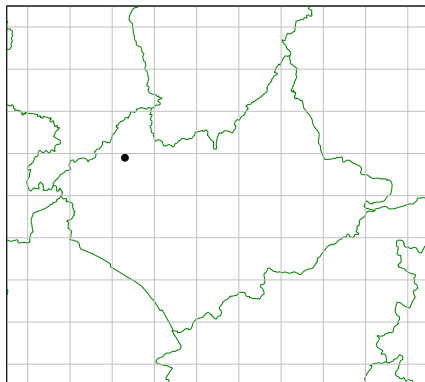
Andy Godfrey recovered the fly from areas adjacent to Gilwiskaw Brook, Packington Nook near Coalville during survey work in 2008. A further record came from the Woodbrook near Nanpantan when found during Environment Agency monitoring in 2018.



Simulium noelleri Friederichs (1 record)

Few English records with more from Wales.

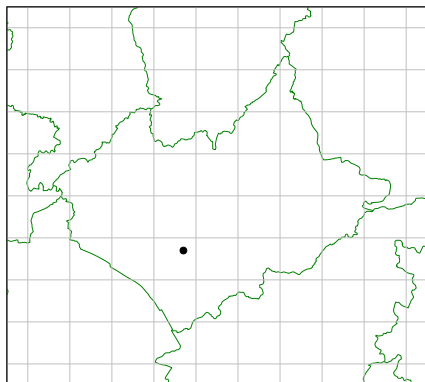
Noted at Sapcote by Graham Calow (2012) with identification by national expert Roger Crosskey.



Simulium ornatum Meigen (1 record)

Widely recorded throughout England & Wales but scarce in Scotland.

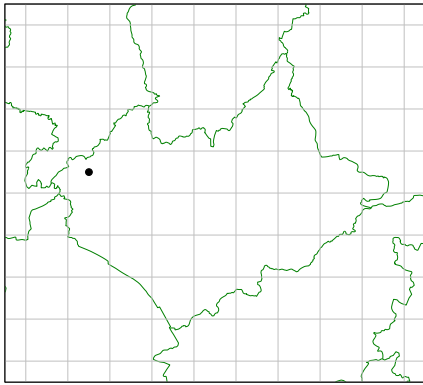
The only VC55 record came from the Grace Dieu Brook in 1989 when found by Greg Thurlow with identification by John Mathias.



Simulium reptans Linnaeus (1 record)

Mainly recorded from Wales with scattered records from elsewhere.

Noted by WA Vice in the Blaby area (VCH-L, 1907).



Simulium vernum Macquart (2 records)

Mostly recorded from Wales with scattered sighting from elsewhere.

Andy Godfrey recovered the fly from areas adjacent to Gilwiskaw Brook, Packington Nook near Coalville during survey work in 2008.

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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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