

Soldierflies and Allies Recording Scheme

Newsletter 10, spring 2024

Edited by Martin C. Harvey
ISSN 2053-471X (print)
ISSN 2053-4728 (online)



Silver Colonel, Odontomyia argentata, one of several found in May 2023 during the Dipterists Forum spring field meeting, the first time this species has been recorded in South Wiltshire. Specimens found by Erica McAlister, Robin Hutchinson and Sue Taylor, photo by Martin Harvey.

Our 2024 newsletter includes recording scheme updates, species on the move, and a nice example of using an Alan Stubbs discovery from 1987 to monitor soldierfly larvae. And we can't mention Alan Stubbs without adding our congratulations for his [MBE awarded for his work on invertebrate conservation](#).

Many thanks to the authors, photographers and recorders who have contributed to this issue.

Robberflies and aphids



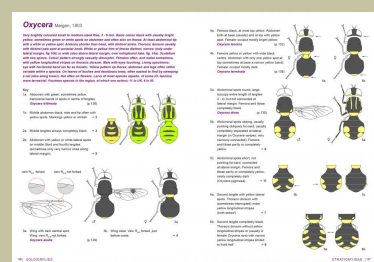
Stripe-legged Robberfly *Dioctria baumhaueri* with aphid prey – photo by jerry2018 via iNaturalist

I'm grateful to Alan Stubbs for passing on an email from Adam Parker, who has recorded Stripe-legged Robberfly *Dioctria baumhaueri* preying on Woolly Beech Aphid *Phyllaphis fagi* (Lincolnshire, June 2023). Alan points out that the only robberfly previously known to prey on aphids in the UK is Striped Slender Robberfly *Leptogaster cylindrica*. Alan points out that Woolly Beech Aphid is an unusually small prey item for *Dioctria* robberflies, and wonders whether this was a one-off or whether it happens more regularly but has been overlooked before.

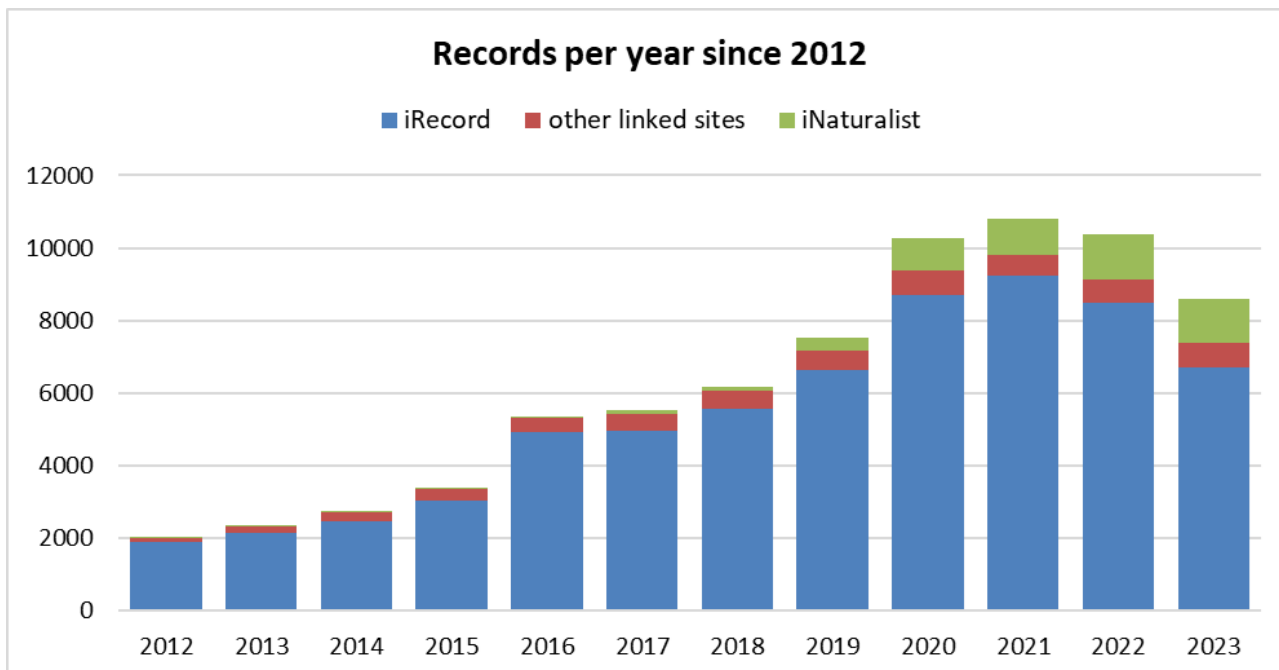
By coincidence a week or so later iNaturalist user jerry2018 posted photos of *Dioctria baumhaueri* preying on another aphid. In addition, Lavigne's [Predator-Prey Database for the family Asilidae](#) cites one instance of *Dioctria baumhaueri* preying on the grain aphid *Macrosiphum avenae* in the United States in the 1960s. So this seems to be a unusual but not unprecedented prey item.

Field guide to flies with three pulvilli by Theo Zeegers & André Schulten

A fantastic guide to seven of the soldierflies and allies families, with well-illustrated keys and species accounts. See the [full review](#) from the Dipterists Forum *Bulletin*. [Available from NHBS](#) (£16.99 + postage).



Recording scheme updates



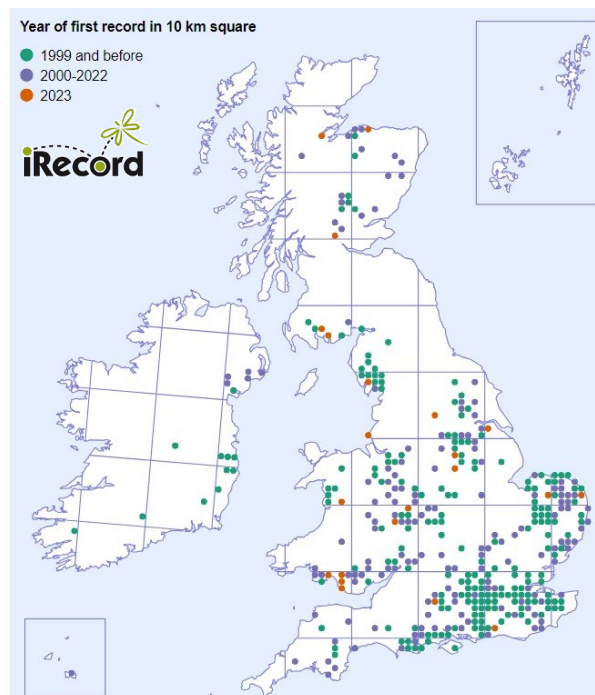
In recent years the recording scheme has been receiving around 10,000 records per year; records for 2023 are still coming in and should reach a similar total. This is a splendid contribution to knowledge of these families and for Diptera recording in general. Most records arrive via iRecord, the preferred route for the scheme, but there are also welcome contributions from other systems linked to iRecord, including NatureSpot in Leicestershire, SEWBRReCORD in South Wales, and iNaturalist.

Over 2,000 people have contributed records in 2023, and all are gratefully received, even if you've only added an individual sighting. A special mention for our top ten recorders contributing most records in 2023, with Sue Taylor (276 records) followed by Peter Brash, Paul Cook, Martin Harvey, Andy Brown, Will Scarratt, Matthew Berriman, Phil Brighton, Mike Bailey, and Derek Whiteley.

During 2023 there have been about 80 records that constitute new vice-county records for the species concerned (based on the recording scheme data alone). Many of these are the result of increased recording filling in gaps in the known ranges, but for some species there are clear indications of range expansion. Two examples are described in separate articles in this newsletter, for *Oxycera rara* and *Eutolmus rufibarbis*.

'Missing' species

Of course, not all species are expanding their range, and there are eight species that were recorded in the second half of the 20th century but have not been reported at all since 2010. Two of these are likely to be extinct in the UK:



Distribution of Common Awl Robberfly, Neoitamus cyanurus; orange dots show 10 km squares where this species was recorded for the first time in 2023, including five new vice-county records, based on the recording scheme data.

- Asilidae – Ginger Robberfly, *Choerades gilvus*: listed as Endangered, but assumed extinct, with the last record in North Hampshire in 1951
- Bombyliidae – Heath Villa, *Villa venusta*: Critically Endangered (Presumed Extinct), last recorded in Dorset in 1958

Two more have always been rarities, but could still be surviving:

- Asilidae – Scarce Awl Robberfly, *Neoitamus cothurnatus*: Critically Endangered, last recorded in Glamorganshire in 1997, otherwise only known from the Oxford area 1895–1921; recent records from the Channel Islands
- Stratiomyidae – Irish Major, *Oxycera fallenii*: Vulnerable, only known from North-east Yorkshire in 1996 and 1997

The remaining four species on the ‘missing’ list are all species that are hard to find and/or identify. Hopefully they are still present and are simply overlooked, but it would be very reassuring if we could find evidence for this.

- Asilidae – Breck Robberfly, *Machimus arthriticus*: Endangered, confined to sites in the Brecklands of West Norfolk and West Suffolk, last recorded in 2010
- Stratiomyidae – Clouded Centurion, *Sargus cuprarius*: Data Deficient, last recorded in East Sussex in 2004, apart from a possible 2022 record awaiting confirmation; formerly widespread, and very similar to the currently widespread *Sargus iridatus*, from which it requires dissection to confirm, so may be overlooked; however, all recent dissections that I’m aware of (other than the possible 2022 record) have proved to be *iridatus*
- Therevidae – Light Scottish Stiletto, *Thereva inornata*: Endangered, a species of rivers and woods in the Scottish highlands, last recorded in South Aberdeenshire in 2000
- Therevidae – Cliff Stiletto, *Thereva strigata*: Endangered, almost entirely confined to chalk cliffs along the south coast of England, last recorded in Isle of Wight in 2007

‘Newest’ species

The most recent additions to the British list are the Anthracite Bee-fly, *Anthrax anthrax*, and the Black Soldierfly, *Hermetia illucens*. The latter continues to be reported as an occasional escape from captivity (it is often reared for animal feed) but shows no sign of establishing in the wild.

In contrast, the Anthracite Bee-fly is now a well-established resident in the Canterbury area in East Kent, and in 2023 a new location popped up in North Wiltshire. It was recorded by Leanne Reddock who saw it flying around a bee hotel and apparently flicking eggs towards it, and it will be intriguing to see if it can establish itself here or if this will be another one-off sighting, as has previously happened in Cambridgeshire and Essex.



*Anthracite Bee-fly Anthrax anthrax from North Wiltshire.
Photo by Leanne Reddock.*

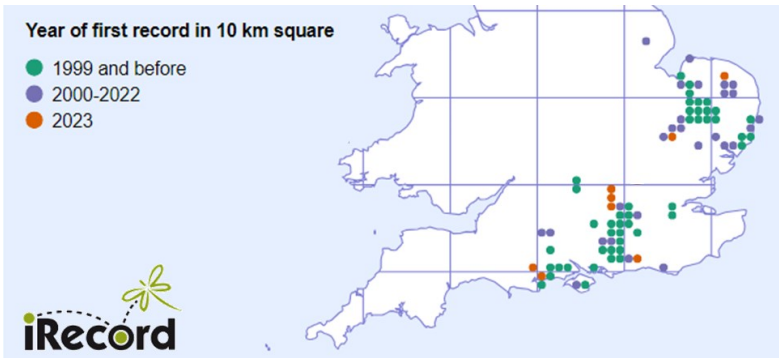
Soldierflies and allies in the entomological journals

The following articles and notes have appeared in recent journal issues.

- Macdonald, M. 2023. The bumblebee robberfly *Laphria flava* (Linnaeus) (Diptera, Asilidae) in Scotland. *Dipterists Digest* 30: 43–50.
- Bland, K.P. 2023. Scottish records of two species of uncommon Stratiomyidae (Diptera). *Dipterists Digest* 30: 155. [New 10 km square records for *Stratiomys potamida* and *Oxycera dives*.]

Robberfly *Eutolmus rufibarbis* extending its range and habitat

by Martin C. Harvey



The Golden-tabbed Robberfly, *Eutolmus rufibarbis*, has always been confined to southern and eastern England, with the largest proportion of records coming from Surrey. There is evidence of a spread in range in recent years, and in 2023 records were reported from one new vice-county (Buckinghamshire) and eight new 10 km squares (orange dots on map).

It has been regarded as a species “confined to sandy districts” (Stubbs and Drake 2014), but the new Buckinghamshire records are from chalk grasslands. On 1 July 2023, the Buckinghamshire Invertebrate Group held a field trip at Kings Barn Farm, Medmenham (SU8185). This is a large area of chalk grassland and woodland which is being managed to restore grassland biodiversity. We were pleased to find large numbers of *Eutolmus rufibarbis*, which was flying alongside Downland Robberfly, *Machimus rusticus* (which in the males can look confusingly similar).

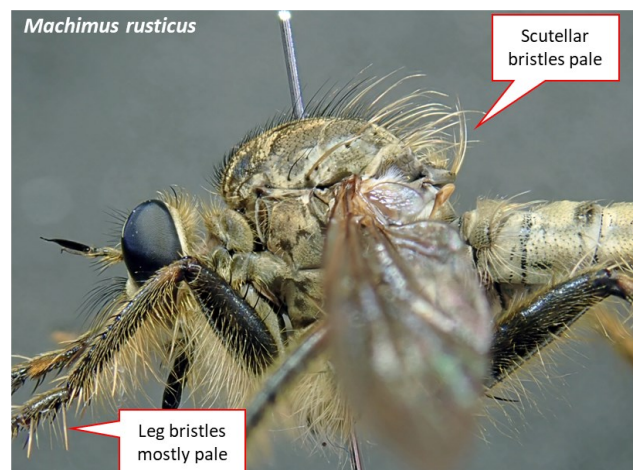
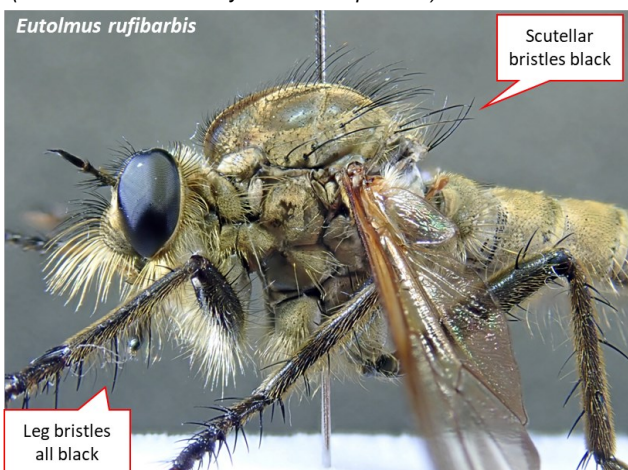
On 23 July 2023 another Buckinghamshire site was reported on iRecord, when Andy Spragg photographed an individual at Chairborough Local Nature Reserve, High Wycombe (SU8492). This site is a relatively small area of chalk grassland and scrub, entirely surrounded by housing and commercial buildings. Further specimens were found at the same location when I visited two weeks later.

Machimus rusticus is also spreading in range, so do take a close look at any large, dark-legged robberflies you find on chalk grasslands in south and east England.



Above: location of Chairborough Nature Reserve, surrounded by buildings, and inset photo of *Eutolmus rufibarbis* at Chairborough (photo by Andy Spragg).

Below: comparison of bristle colours for *Eutolmus rufibarbis* and *Machimus rusticus*, which can be very similar in the males (females have obviously different ovipositors)



Grapefruit as a monitoring tool for soldierfly larvae

by Richard Newton

Back in 1987, in *Larger Brachycera Recording Scheme Newsletter 4*, Alan Stubbs described how he stumbled across the fact that fruit, and in particular grapefruit skin, holds an attraction for soldierfly larvae. At that time Alan said “I hope to have started a revolution in finding strat larvae”. I’m not sure how many people have joined the revolution since then, but Richard Newton has taken up the challenge, and describes some initial results from a study he is carrying out near Oxford.

I have been counting soldierfly larvae at Chilswell Valley [a local wildlife site on the edge of Oxford with a small area of calcareous fen] since April, using grapefruit skin traps. The majority of the grapefruit skins have been placed along the courses of five unshaded springs, although two springs in the woodland were also included.

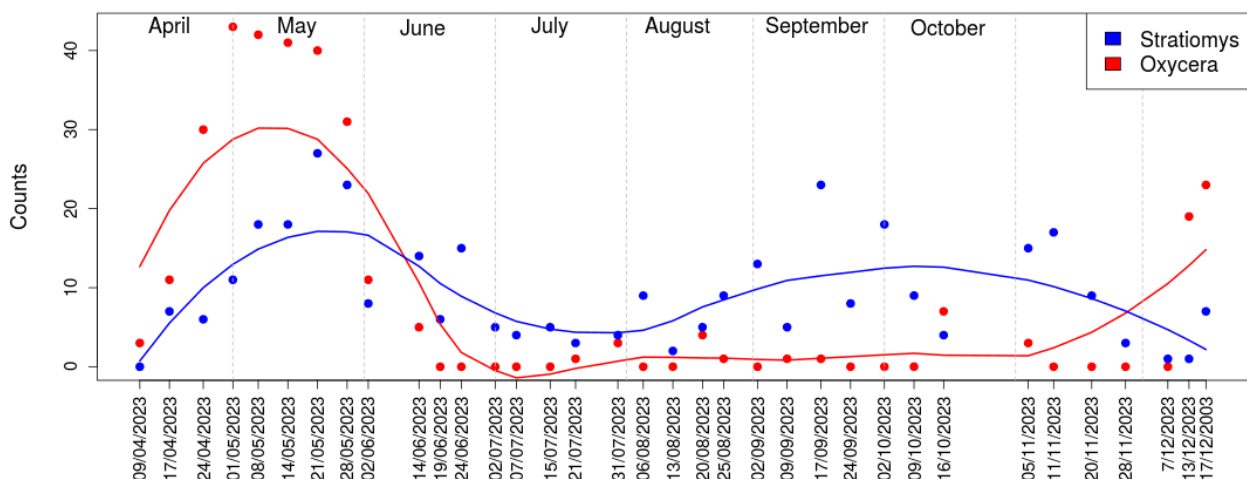


Above: grapefruit skins positioned in wetland habitat at Chilswell Valley.
Below: larvae of *Stratiomys* sp. attracted to the grapefruit.
Photos by Richard Newton

The number of measurement locations has varied throughout the year as locations have dried out in the summer or become too boggy to access in winter. I have also had to restrict the number of locations when fewer grapefruit skins have been available. At one stage I had 35 measurement locations, but the graph (below) shows the total counts only from the 16 locations which have been present and supplied with grapefruit skins throughout the study. To date, larvae have been identified to genus level, and have been a mix of *Stratiomys* and *Oxycera*.



There is likely to be some ‘noise’ in the measurements due to not being able to have grapefruit in an ideal state of decay at all locations on all measurement dates. On some dates the grapefruit may be too fresh or too decomposed. When I had a plentiful supply of grapefruit I could have up to three grapefruit skins at each location. In hot weather when the grapefruit decomposed quickly it was usually possible to have only one grapefruit at each location which might not necessarily be in the ideal state of decomposition. On the graph I have included loess lines to smooth out the noise, and this shows an apparent seasonality in the numbers of *Oxycera* larvae seen, which were relatively frequent early in the year, then seen in very low numbers across summer and autumn, and dramatically increased again at the time of writing, December 2023. Recording is continuing and next year I hope to identify larvae to species level where possible.



Soldierflies on the move

by Martin C. Harvey – adapted from a blog first published on the [Buglife](https://www.buglife.org.uk/) website

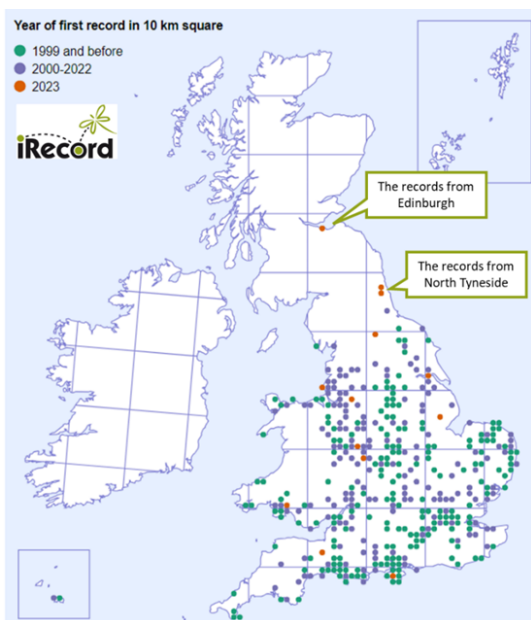
An entomologist is always on the lookout for insects, even in unlikely places! In early July 2023, Chris Barlow was inspecting a wooden fence around a supermarket car park in North Tyneside. Perhaps not the first place that springs to mind as good habitat for insects, but Chris knew that the fence was a favourite basking post for a variety of species. And on this occasion there was a newcomer among the usual fence-post crowd: the Four-barred Major Soldierfly (*Oxycera rara*). This distinctive fly breeds in wetlands, and was probably using the fence to warm itself up before returning to the ponds and ditches of the adjacent nature reserve.



Four-barred Major soldierfly (male) from the North Tyneside supermarket fence. Photo by Chris Barlow

It's always interesting to find a species that you haven't seen before, even more so in this case as it was the first ever record of this species in South Northumberland, representing a jump of 30–40 km from the previous most northerly record. It was swiftly followed by another

record that Chris made the same day, at a different location a kilometre or so north of the first sighting.

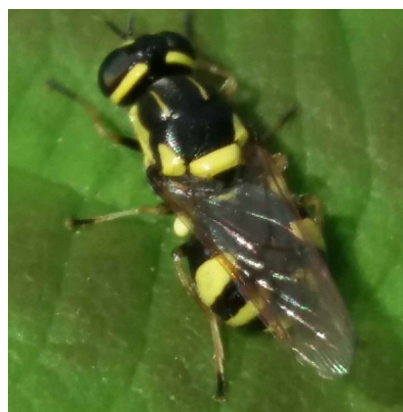


But the Four-barred Major didn't stop there: a couple of weeks later David Notton recorded this species at Lauriston Agroecology Farm, on the Firth of Forth coast near Edinburgh. This was the first ever record for Scotland, and pushed the known range further north by some 100 km. The habitat here was a more typical wetland with ponds, in an area of the farm set aside for nature. More of the soldierflies were seen in subsequent visits so it seems likely to be breeding, and benefiting from the wildlife-friendly management at this farm.

It's always exciting to see records coming in from new places and showing how the flies are moving around and surprising us. But alongside the pleasure of seeing a species

do well is the concern about what this actually means for biodiversity in general. It is very likely that some aspect of climate change is driving these changes, and although an expansion of range may be a good thing for the Four-barred Major, other species will be facing challenges as they try to find the conditions they need in a rapidly changing environment. Soldierflies, along with many other types of fly, rely on finding wet habitats of one sort or another for their larvae to develop in. Climate change may increase the frequency of droughts at certain times and places, or conversely may result in more severe flooding incidents, neither of which will benefit species that depend on finding sheltered, shallow waters in which to breed.

Four-barred Major soldierfly (female) from near Edinburgh. Photo by David Notton



This means that seeing species on the move generates mixed feelings. It's encouraging that at least some species appear to be resilient and are able to disperse to find new opportunities, but at the same time it's concerning that climate changes are leading to more extreme conditions. And species that have more specialised habitat requirements are likely to struggle to find what they need as their world changes around them.