

Soldierflies and Allies Recording Scheme

Newsletter 9, spring 2023

Edited by Martin C. Harvey
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Orange-horned Green Colonel, Odontomyia angulata, one of several individuals seen during the Dipterists Forum summer field meeting in Norfolk, July 2022. Photo by Martin Harvey.

Welcome to another recording scheme newsletter. Unfortunately it was not possible to produce a newsletter in 2022, but having skipped a year we are back for 2023. Included in this issue are some natural history notes for various species, updates on recent records, and a longer article describing some taxonomic detective work within the snipefly family, Rhagionidae.

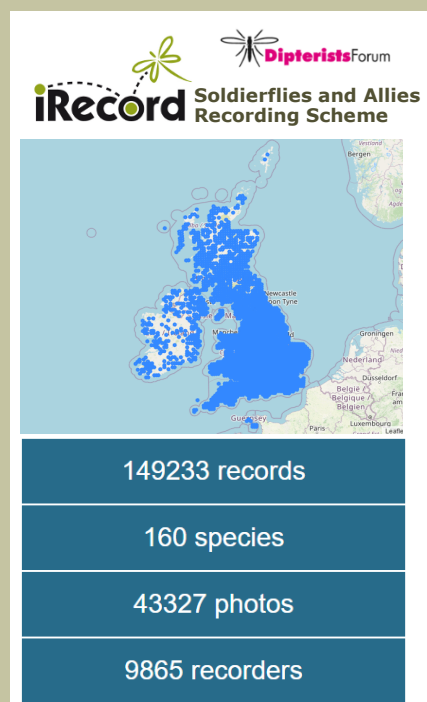
Many thanks to the authors, photographers and recorders who have contributed to this issue.

Sending in records (with some notes for iNaturalist users)

The recording scheme welcomes records for any of the species included in our eleven families, whether just one records or thousands, for one species or many, new or old. The preferred route for sending in records to the scheme is via [iRecord](#) or by sending in spreadsheets. iNaturalist is not a preferred option, because it doesn't link well to UK species names and grid references, and we are not able to provide feedback in the same way we can on iRecord. However, if you do use [iNaturalist](#) your records will reach the scheme, and you can help us by following these guidelines where possible:

- Choose an open licence for your records: CC0 or CC BY will enable your records to be used as widely as possible; CC BY-NC (non-commercial) can prevent records being used by some schemes and records centres. Other licence choices (such as SA and ND) are difficult to interpret for individual records, and cannot be used in iRecord or the NBN Atlas (nor on GBIF). (Note that the choice of licence for your photos is up to you and is separate to the record licence.)
- Provide your real name if possible; this can be added as the "Display name" in your iNaturalist profile, and will then be used as the recorder name on iRecord.
- Avoid obscuring locations unless absolutely necessary, as this can prevent them being linked to grid references of suitable precision for recording scheme use.
- Records on iNaturalist are imported into iRecord, so it is helpful if you can avoid adding the same record to both iNaturalist and iRecord, to avoid duplication of both records and of verifiers' time.

Further details are available on the [recording scheme website](#).



Red-legged Robberfly *Dioctria rufipes* (Asilidae) courtship

by Martin Drake



Dioctria rufipes mating. Photo Andy Brown.

The courtship described by Parmenter (1952) for *Dioctria* (no species named) was similar to his later description for *D. baumhaueri* Meigen and Melin's (1923) for both *D. rufipes* (De Geer) and *D. hyalipennis* (Fabricius), but different from Parker's (1995) for *D. cothurnata* Meigen. It is unclear what species formed the basis of Parmenter's 1952 account but I saw exactly this behaviour by *D. rufipes* in my Devon garden.

At 9:00 in the morning on 14 June 2020, when the sun was coming and going after an overcast and drizzly start to the day, a male was swinging back-and-forth in an arc of about 120°, some 10-15cm in front of a female that was sitting on a leaf of meadowsweet (*Filipendula ulmaria*), and always facing her. After about 10 swings, he quickly flew to her and coupled, but I was not paying enough attention at the final moment so cannot say what happened after that as I was distracted by a potential mating of *Chrysopilus cristatus* (Fabricius). *Dioctria rufipes* is a frequent fly in this damp part of the garden that resembles a wet meadow.

References

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Flowers visited by Western Bee-fly *Bombylius canescens* (Bombyliidae)

by Martin Drake

Stubbs & Drake (2014) mention a few flowers visited by *Bombylius canescens* Mikan but there appears to be little published information on the range that it uses. This spring I watched several individuals on 7 days between 26 May and 16 June in my East Devon garden and neighbouring countryside, the first I'd seen here for a few years. An unfortunate individual that died in the house allowed its identity to be confirmed. Germander Speedwell (*Veronica chamaedrys*) was a favourite (Stubbs & Drake mention Heath Speedwell), with visits to this plant on five of the seven days. One fly spent many minutes going systematically from flower to flower in a patch with about 100 flowers. A large area of Common Chickweed (*Stellaria media*) was also searched systematically for many minutes, and this fly showed no preference for diverting to the speedwell that was mixed in with the chickweed. This fly did approach and quickly reject several Red Deadnettle (*Lamium purpureum*), which is normal behaviour as flies don't like closed flowers, so seeing a bee-fly at Bush Vetch (*Vicia sepium*) was unexpected; this was not just a single accidental probing but several flowers were visited. Also unexpected was Common Daisy (*Bellis perennis*) in the lawn, a flower



Bombylius canescens visiting a *Veronica* flower. Photo John Lyden.

used relatively seldom by flies considering its ubiquity. Stubbs & Drake mention Herb-Robert (*Geranium robertianum*) being visited, and I can confirm this and add Shining Crane's-bill (*G. lucidum*) of which several flowers were visited. A quick dash to Red Campion (*Silene dioica*) was probably a mistake in one fly's search for Herb-Robert growing with it.

As usual with bee-flies, this behaviour suggested a wide diet but also a degree of selectivity at a time when there is an abundance of flowers to choose from. It is possible that feeding while hovering allows them to use a resource of tiny flowers that is under-used by flies and bees of the same size as *B. canescens*, since landing on these small flowers was clearly a cumbersome activity for, say, *Platycheirus* hoverflies.

References

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Black-legged Water-Snipefly *Ibisia marginata* (Athericidae) found in Perthshire

by Robert Wolton

On 12 June 2021, while sweeping vegetation around a large shingle bank beside the River Earn, near Comrie in Perthshire (NN790216), I caught two individuals of this species. The NBN Atlas (and Soldierflies and Allies Recording Scheme) does not show any records further north in Scotland than Dumfries and Galloway, so this record near Comrie extends the known range considerably northwards, by some 130km. I also caught two Northern Silver-stiletto flies *Spiriverpa lunulata* on the same day on the site. To add further interest, there were signs of recent beaver activity.



Ibisia marginata from Comrie. Photo Rob Wolton.

House Windowfly *Scenopinus fenestralis* (Scenopinidae) reared from Jackdaw nest

by Robert Wolton

In February 2021 I cleaned out a barn owl box in a farm shed that had been used by Jackdaws the previous season, and after removing all the twigs almost filled a 15 litre white feed bucket with the debris. I covered this with netting and waited. Over the course of the summer quite staggeringly large numbers of White-shouldered House-moths *Endrosis sarcitrella*, Brown House-moths *Hofmannophila pseudospretella* and clothes moths *Tineola* spp emerged, and a few Skin Moths *Monopis laevigella*.

On 14 July four *Scenopinus fenestralis* appeared, followed over the next few days by a further six. Over more than ten years of being interested in flies, I have previously only seen two individuals on the farm, both on the internal surfaces of windows in our house (the fly in well named). Otherwise, in Devon it has been recorded only from Martin Drake's house on the other side of the county!

The association with a Jackdaw's nest is not unexpected since in the wild the natural home of the house windowfly includes birds' nests in hollow trees – among them those of Jackdaws as well as sparrows, swallows, starlings and pigeons (Stubbs and Drake 2014, *British soldierflies and their allies*). The larvae are thought normally to feed upon the larvae of "clothes" moths as well as those of carpet beetles and perhaps even of fleas. The only other flies to emerge from the bucket's contents were two *Hydrotaea*

armipes (a muscid) and one each of the helemomyzids *Tephrochlamys rufiventris* and *Heteromyza rotundicornis*.

If you have not come across windowflies, you might like to try collecting disused birds' nests from buildings, to see what emerges from the detritus.

My thanks to Andrew Cunningham for his excellent photo of one of the specimens from the Jackdaw nest.



An antennal enigma – are the snipe flies *Spania nigra* and *Archicera avarorum* (Rhagionidae) the same species?

by Robert Wolton

Male and female *Spania nigra* Meigen, 1830, have differently shaped antennae. I noticed this when looking at two females and a male reared from liverwort mats (see separate note in this newsletter) and confirmed it by looking at further specimens I have collected, both from our farm in Devon and from coastal cliffs in Norfolk near Cromer. This difference has been overlooked by some authors and researchers with the unfortunate consequence that the female may, in continental Europe, have been described as a separate species and even placed in different genus – *Archicera avarorum* Szilády, 1934! It's an intrigue that stretches back more than a hundred years and across seven European countries.

At the start of the last century Verrall (1909) recognised the difference in antennal shape between male and female *S. nigra* antenna, providing illustrations, as much more recently have Nagatomi and Saigusa (1982) (based on Japanese material and a female examined in the Natural History Museum in London). These works appear to have gone unnoticed by recent European workers. Even Alan Stubbs and Martin Drake's superb handbook *British soldierflies and their allies* (Stubbs and Drake 2014) does not remark on the difference, rather giving a description of antennal shape that fits the male better than it does the female. Something for a third edition to address, perhaps?

I'll start with a description of the antennae in *S. nigra* (see photos opposite and on Steven Falk's excellent [Flickr site](#)). The male antenna has a nearly rectangular third segment with rounded corners, the "arista"¹ arising from the lower front corner, its base occupying no more than half the distal end of the third segment. Unlike the first two segments, both arista and third segment are densely covered in short hairs, and the arista is 1.5 to 2 times the length of the third antennal segment: it is round in cross section. In marked contrast, in the female the third antennal segment is more rounded than in the male and the arista proportionally longer, 2.5 to 3 times as long. The arista is also laterally flattened, and in the specimens I have its base occupies two thirds, sometimes all, of the end of the third segment – indeed in several specimens it is difficult to see where the antennal segment ends and the arista starts (see the photo opposite). As in the male both third segment and arista are covered by short, but slightly longer, hairs. The flattened female arista tapers fairly evenly from its broad base to a fine tip. There is some variation in antennal shape, especially in the extent to which there is a step between third antennal segment and arista, but there remains a clear difference in arista between sexes in all the specimens I have to hand (5 males, 6 females). There is also a difference in palp shape between males and females,

¹ The "arista" should probably be called an arista-like stylus since in both males and females it appears separated from the third antennal segment (the first flagellomere or postpedical) and shows signs of annulation (i.e. division into several segments or further flagellomeres): some authors refer to it as a prolongation of the third segment. Together all the flagellomeres constitute the flagellum (Cumming and Wood 2017).

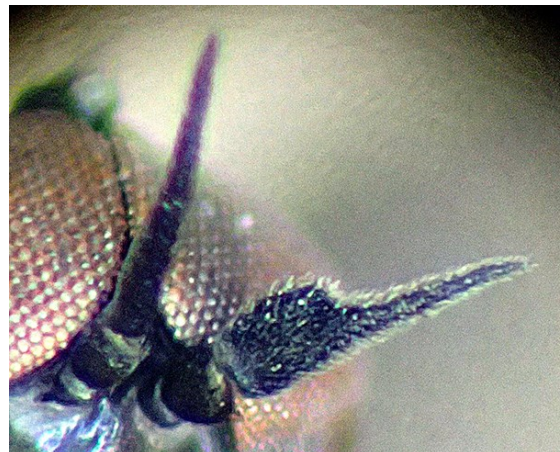
the females being broader and flatter and lacking long hairs at the tip, but that is of less relevance to the story in hand.

In 1934 Szilády described *Archicera avarorum* based on two females, one from Austria and the other from Croatia, held in the Természettudományi Museum in Budapest, Hungary. It is presumed they were collected before the First World War. In his brief account Szilády recognised the similarity to *Spania* but placed the specimens in a different genus on the basis of “their lancet-shaped antennae, the third segment of which showed incipient segmentation”. I am grateful to Papp (2018) for providing this information and for reporting that the generic name reflects Szilády’s view that the antennal form is a primitive feature, *Archicera* meaning ancient horn in Greek. The specific epithet refers to the Avars, ancient inhabitants of the Carpathian Basin prior to its invasion by the Hungarian tribes at the end of the 9th century. Unfortunately, the museum in Budapest burnt down in the 1956 Hungarian Revolution and the two syntypes were lost.

To this day, *avarorum* remains the only species in the genus *Archicera*. It appears to be very rare since it was not until 2017 that the next specimen was found, in Transylvania, Romania. László Papp at the new Hungarian Natural History Museum took the opportunity to describe it as the neotype (Papp 2018). It too was a female. Papp compared it with a male *Spania nigra* from Romania, apparently the only specimen of that species he had to hand. He does not remark upon any specific differences from *S. nigra*, noting that the wing venation is the same. However, he does provide a photograph of one of the antennae which clearly shows the arista to be similar in length and shape to that of female *S. nigra* as I describe above, if rather thinner than in any of my specimens. In his description of the “flagellomere” (encompassing my third antennal segment and arista) he notes that the longest, mid-part is subcylindrical, so flattened to some extent (the terminal part being a minute tip to the arista). If Papp had had a female *S. nigra* to hand or been aware of Verrall’s (1909) or Nagatomi and Saigusa’s (1982) descriptions and illustrations, would he have considered the specimen he described to belong to that species? I believe he may have. Sadly, László Papp died in 2021.

The next reported encounter with *A. avarorum* is from Brussels, Belgium. Here, Patrick Grootaert, Hugo Raemdonck and Alain Drumont caught 13 in Malaise traps set in the Botanical Garden Jean Massart in 2015 and 2017 (Grootaert *et al.* 2020). These were all females. Like Szilády and Papp before them, they infer that *A. avarorum* can be distinguished from *S. nigra* solely on antennal shape: all make the understandable but as it turns out false assumption that female *S. nigra* have similar antennae to the males of that species. Grootaert and his co-authors provide excellent illustrations of the left and right antennae of a single female from among their specimens, showing that variation can occur even within the same specimen: the shape of both is, however, well within the range of variation seen in the female *S. nigra* I have in my collection. It does seem probable to me that the specimens collected in Brussels are in fact female *S. nigra*.

Curiously, neither Papp’s photograph nor Patrick, Hugo and Alain’s illustrations show the segmentation in the



Spania nigra antennae, male above, female below. Both emerged 4 June 2021 from *Pellia* liverwort taken from wet woodland on Locks Park Farm, Hatherleigh, Devon. Photos Rob Wolton.



“arista” which I believe I can just see in my specimens and which Szilády originally reported. Perhaps this is an artefact of preservation means – my specimens were pinned and air dried from fresh material, those from the botanic garden preserved in alcohol.

The next part of the story completes the cycle of probable confusion. In Spain, Miguel Carles-Tolrá recently examined 1995 and 1996 Malaise trap catches from a forest in the north of the country (Carles-Tolrá 2021). Searching for rhagionids, he found not just a female conforming to *A. avarorum* but also two males which he took to be of the same species. Since these were apparently the first male *A. avarorum* known to science, he describes them in detail. His paper includes photographs of both male and female antennae – but they look identical to those of male and female *S. nigra* as far as I can judge. He also provides photos of the male genitalia, noting that the male surstyli appear identical to those of *S. nigra* illustrated by Kerr (2010). Carles-Tolrá does not make any further direct comparisons between the two species. His photo of the male genitalia does, however, reflect very closely the illustrations of *S. nigra* male genitalia provided by both Rozkošný and Spitzer (1965) and Nagatomi and Saigusa (1982). Carles-Tolrá notes that there is sexual dimorphism in the palps: the descriptions and photos reflect my own observations for *S. nigra*. Surely, all this confirms that *A. avarorum* is indeed the same species as *S. nigra*?

I am no taxonomist and may be quite wrong about this. Further close examination of male and female genitalia may help, but, as Patrick Grootaert has remarked to me, the only sure way we are likely to be able to tell if they are distinct species is by DNA sequencing. Do the bar codes differ?

Whether one species or two, should the flies be placed in the genus *Archicera* or *Spania*? Like László Papp, Patrick Grootaert and Miguel Carles-Tolrá I would not wish to comment on this – I am hardly qualified to do so! Papp (2018) quotes Akira Nagatomi and Toyohi Saigusa (in prep.) saying that the variation in antennal shape in *Archicera* is similar to that observed in *Spania* species (of which in addition to *nigra* there are a further three found in Japan), so *Archicera* is probably a junior synonym of *Spania*. The paper does not yet appear to have been published.

My thanks to Martin Drake, who had already noticed the difference in antennal shape between the sexes in *S. nigra*, for helpful discussions, references and comments on this note.

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Liverwort Snipefly *Spania nigra* (Rhagionidae) reared from the liverwort *Pellia epiphylla*

by Robert Wolton

On 9 May 2020, to my surprise, a male of the tiny (2mm) rhagionid *Spania nigra* appeared in an emergence trap set in wet willow/ alder woodland on our farm in Devon (SS517014). Verrall (1909) and Stubbs and Drake (2014) refer to an 1896 account from mainland Europe, probably France, of a female being reared from a thallus of *P. neesiana*. After reading this, I examined the ground beneath the emergence trap and duly found a small mat of *P. epiphylla*, a very similar species to *P. neesiana*. A further two *S. nigra* were present in the trap when I next checked it, on 12 May.

To try and confirm the association with *Pellia*, in spring 2021 I scraped some mats of the liverwort's thalli off the woodland floor and placed them in a small bucket with a net covering. On 4 June three adult *S. nigra* emerged, a male and two females.



Female *Spania nigra*. Photo Rob Wolton.

Thus, the association of the snipefly with *Pellia* in Britain is confirmed, and as conjectured by Alan Stubbs and Martin Drake, damp or wet woodland provides suitable larval habitat, in addition to coastal landslips and cliff runnels, and doubtless other habitats where the liverworts occur. The ground in our wet woodland is kept open by cattle grazing, providing plenty of bare soil suitable for colonisation by the liverwort.

My thanks to John Day for identifying the *Pellia*.

Recording scheme updates

Soldierflies and allies in the entomological journals

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

- Chandler, P.J. 2021. The two-winged flies (Diptera) of Windsor Forest and Great Park. *Dipterists Digest* 28 Supplement: 1–126. [Peter Chandler's masterful summary of the habitats and fauna covers all Diptera families, including soldierflies and allies.]
- Crowley, L. 2021. *Pandivirilia melaleuca* (Loew) (Diptera, Therevidae) recorded from Wytham Woods, Oxfordshire. *Dipterists Digest* 28: 250–251.
- Drake, C.M. 2022. Swarming behaviour of male *Chrysopilus cristatus* (Fabricius) and *C. asiliformis* (Preyssler) (Diptera, Rhagionidae). *Dipterists Digest* 29: 19–34.
- Edwards, B., and Foster, A.P. 2021. Further records of *Villa cingulata* (Meigen) (Diptera, Bombyliidae) from Dorset. *Dipterists Digest* 28: 163–164.
- Gabriel, R., and Sherwood, D. 2020. *Bombylius major* L. (Diptera: Bombyliidae) as prey of *Metellina mengei* (Blackwall) (Araneae: Tetragnathidae). *British Journal of Entomology and Natural History* 33: 244.
- McBride, H.M. 2021. A casual observation of a single occurrence of *Villa cingulata* (Meigen) (Diptera, Bombyliidae) at a previously unreported site in North Dorset. *Dipterists Digest* 28: 165.
- Rotheray, G.E. 2021. *Atylotus fulvus* (Meigen) (Diptera, Tabanidae) in southern Scotland. *Dipterists Digest* 28: 125–126.
- Smith, D., Baird, K., Horsfield, D., Bland, K.P. and Harvey, M. 2021. *Pachygaster atra* (Panzer) (Diptera, Stratiomyidae) in south-east Scotland. *Dipterists Digest* 28: 94.

Recording scheme updates

During 2021 the number of records sent in to the recording scheme was the highest ever, at just over 10,000 records, and for 2022 we have over 8,000 records so far, with more to come as further spreadsheets arrive and records are entered. One big job that was more-or-less completed in 2021 was the transfer of the bulk of the older recording scheme records into the iRecord database, so that nearly all of the recording scheme data is now available in one place for ease of use and checking. From iRecord the records are [shared with the NBN Atlas](#) (and updated monthly) for wider accessibility. Data from the recording scheme has been downloaded from the NBN Atlas over 5,000 times.

The combination of increased recording effort and range expansions for some species resulted in over 50 new vice-county records in 2021, and astonishingly another 50+ new VC records in 2022. Even Broad Centurion *Chloromyia formosa* was new to South Aberdeenshire, recorded by Graeme Reid in 2021.

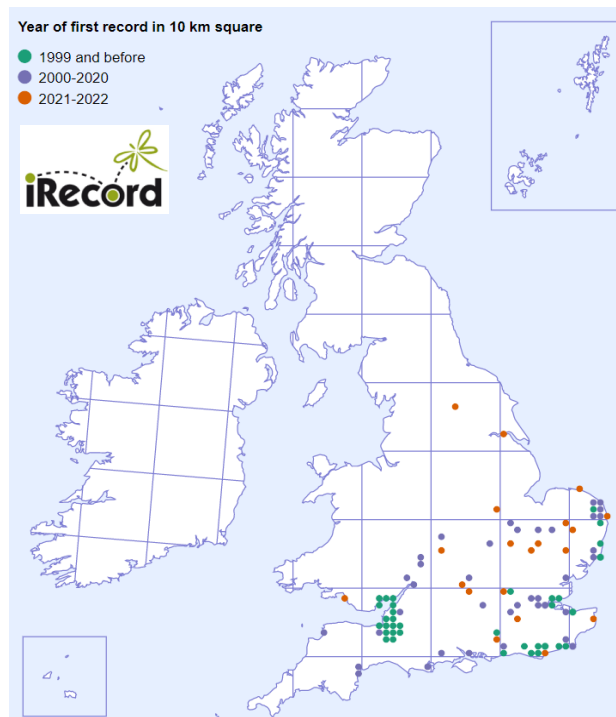
Bee-fly Watch ran again in spring 2021 and 2022, continuing to attract a wide range of people who clearly get a lot of enjoyment from watching and recording bee-flies. Probably the most significant records in 2022 were of Dotted Bee-fly, *Bombylius discolor*, when Nick Bowles and Ian Carle made the first ever Hertfordshire records, and then Matthew Garnham recorded it in both East and West Suffolk, a new VC record for the former county, and the first records anywhere in East Anglia for about 100 years.

A number of other species have continued to expand their range, perhaps most dramatically in the case of the Ornate Brigadier soldierfly, *Odontomyia ornata*. During 2022 there were new vice-county records in Berkshire (Brian Walker and John Bloomfield), West Norfolk (Gill Judd), North Lincolnshire (Darren Matthews), Leicestershire (Matthew Berriman) and Mid-west Yorkshire (Calum Paterson).

The related Silver Colonel, *Odontomyia argentata*, also spread in 2022 with new VC records in Worcestershire (John & Denise Bingham) and Shropshire (Nigel Jones).

The Dipterists Forum field meetings produced some significant records in 2022. It was good to see Wood Snipefly, *Rhagio annulatus*, in numbers at Wytham Woods during the spring meeting, making this the strongest known UK population for this widely-scattered but very rare species. And the summer field trip to Norfolk resulted in numerous records for rarer species including Orange-horned Green Colonel, *Odontomyia angulata*, Levels Yellow-horned Horsefly, *Hybomitra ciureai*, Big-spotted Cleg, *Haematopota bigoti*, and Levels Cleg, *Haematopota subcylindrica*.

Distribution of *Odontomyia ornata*, with orange dots showing the 10 km squares where this species has been recorded for the first time in 2021 and 2022.



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

A fantastic new guide to seven of the soldierflies and allies families, with well-illustrated keys and species accounts. See the full review in the Dipterists Forum *Bulletin*. [Available from NHBS](#) (£14.99 + postage).

