YORKSHIRE DRAGONFLY GROUP

SKIMMER 2018

This magazine is produced for the members, containing articles by the members. Please consider writing just one article during the year for inclusion in the next edition. If the subject interests you, it will be of interest to other members of the group.

Many thanks to all those who have contributed to this edition.

I hope you all enjoy it.

June Gittens
Editor

Front Cover photo:

Immature Red-veined Darter
Tom Pudding Flash
Chris Abbott

Back Cover:

Species List for Yorkshire

SKIMMER MAGAZINE

2018 CONTENT

NOTES FROM THE CHAIR

It seems only yesterday that the National Atlas was published in 2013 yet this May it will be four years. The culmination of five years recording it was a great achievement for all involved. Our dragonfly fauna is constantly changing with new species colonising our shores, one already reaching Yorkshire, the Small Red-eyed Damselfly. The Atlas gives us a fixed point from which to monitor future change and to that end a new project has been launched to review the state of the UK's Dragonflies by 2020. So here is an opportunity to contribute to that review by us all increasing our recording effort over the next two years. I hope you can join in, please contact myself or one of the other county recorders if you wish to know more. Alternatively, Google Dragonflywatch to learn more on the BDS website.

Speaking of change, while 2017 was not the best of years it had its moments with a number of sightings of migrants. These were followed by an emergence of Red-veined Darters towards the end of the summer at a site near Goole. You can read more about this exciting event in Pete Hinks article.

The Conservation work at Worlds End has been a great success removing potential shading of the ponds and restoring the heathland. Work has continued this winter pushing the encroaching birch scrub further towards the corners of the site.

It was good to hear Simon Joseph has taken on the roll from Tom Hubball who wished to step down as County recorder for West Yorkshire. We hope to see Simon at some of our meetings this year.

I am very pleased and excited YDG have been invited on a guided tour of some of the more remote parts of Thorne Moors by the Thorne & Hatfield Moors Conservation Forum. You'll find details under our events. I hope many of you can make it, I will certainly be there!

Good dragonfly hunting 2018.

Keith Gittens

RECORDERS REPORTS 2017

BDS COUNTRY DRAGONFLY RECORDERS

VC61 – **Martin Roberts**	vc61@yorkshiredragonflies.org.uk	01904 761918
VC62 – **Keith Gittens**	vc62@yorkshiredragonflies.org.uk	01347 868606
VC63 – **Alistair McLean**	vc63@yorkshiredragonflies.org.uk	01142 782648
VC64 – **Simon Joseph**	vc64@yorkshiredragonflies.org.uk	07972 054098
VC65 – **Keith Gittens**	vc65@yorkshiredragonflies.org.uk	01347 868606

VC 61 SOUTH-EAST YORKSHIRE - Martin Roberts

2017 was a quiet year for Odonata in SE Yorkshire, with fewer records submitted than in recent years. Arguably the most interesting sightings of the year occurred at Oakhill near Goole, which is just over the border into SW Yorkshire, where significant numbers of Red-veined darter were seen in September. This species is frequently recorded in SE Yorkshire at Spurn, some 40 miles to the East, and occasionally near Filey, but usually in low numbers at both sites.

An anecdotal report of Hairy Dragonfly on the upper reaches of Pocklington Canal in May was keenly investigated. If confirmed this would have been a new locality for this species but, in spite of, repeated visits and the obviously suitable habitat at this site, it was not possible to confirm the sighting.

In 2018, the Yorkshire Wildlife Trust is beginning a project to restore a number of dew ponds on the Yorkshire Wolds. Due to the geology of the Wolds there are very few permanent water bodies in that area, so consequently there are few records of Odonata. Several YDG members are looking forward to helping with the survey work.

VC 62 & 65 N EAST AND N WEST YORKSHIRE – Keith Gittens

The season started early with a first record of Large Red Damselfly on Strensall Common on the 9th April.

Red-eyed Damselfly continues to thrive at Gilling Lakes near Ampleforth although much of the floating vegetation was cut and removed part way through the summer. The floating vegetation quickly re-grew and adult Red-eyes continued to be found although the larval population may have been impacted.

Small Red-eyed Damselfly continues to be recorded although numbers at Strensall Common were very low.

In line with other parts of the country it was a good year for migrants with Red-veined Darter recorded at two sites - The Tarn, near Goathland on the 12th June and Seamer Tip Pools, near Scarborough on the 18th June and 3rd October. Then on the 9th July there was a Vagrant Emperor photographed at Scaling Dam towards the northern edge of the North York Moors.

The number of records for these two vice-counties have been limited in 2017 and have been only from about 25% of the recording area. In view of the latest recording initiative for the atlas update in 2020 a plea goes out for as many records as possible in 2018! Many thanks to those sending in records.

FALLEN EMPEROR
One of two male Emperor Dragonflies rescued from the same pond on the same day. Both had damaged wings and were unable to fly.

Keith Gittens

VC64 MID WEST YORKSHIRE – Simon Joseph

Introduction

Mid West Yorkshire extends from York and Goole in the East to the Forest of Bowland and the West Riding in the West.

I took over in the summer, and would like to thank Tom Hubble for previous years, and teaching me about the key sites. Thanks also to the members of the Lancashire and Yorkshire Dragonfly Groups, particularly Keith Gittens, Martin Roberts and Chris Abbott, and more than 50 people who have submitted records.

Key activities in 2017

The Freshwater Habitats Trust supplied kits to test the water quality of 15 sites in VC64 and neighbouring Lancashire. Sites tested included Timble Ings, Malham Tarn, Gisburn Forest and Grindleton Fell. We were pleased to report that 14 were free from nitrates and phosphates. The contaminated site is an abandoned canal cut in Barnoldswick subject to farm run off. Tom organised guided walks at Timble Ings and Grindleton Fell. We also helped on the BDS stand, with other Yorkshire recorders, at York Insect Festival.

Golden-ringed Dragonfly – Cross of Greet

Extensive visits were carried out to confirm species at 16 sites, all of which were confirmed except **Golden-ringed Dragonflies** at one site. They are possibly lost from Grindleton Fell due to tree loss from forestry and overgrowth of streams (15 visits without sightings).

Chris Abbott contacted landowners around Sherburn in Elmet and surveyed various private sites. He filled in gaps in the record, including expanding the known range of **Small Red-eyed damselflies**. The bird watchers at St Aidans RSPB submitted over 250 dragonfly records, including **Red-veined Darters.** Particular thanks to Peter Haig.

Planned Activities

Alice Crosby at Nidderdale AONB has contacted us about the upcoming Wild Watch project. This exciting project aims to fill gaps for key species including Golden-ringed Dragonflies and Black Darters, which should be present but have not been recorded.

UPCOMING EVENTS FOR 2018

Under 18s are welcome with an accompanying adult, and with the agreement of the event leader

Non-members are welcome – fee £2 per visit

Requirements for all outings – bring lunch, binoculars and wear appropriate footwear and clothing

PLEASE CHECK WEBSITE FOR FULL AND UP TO DATE DETAILS OF ALL FORTHCOMING OUTINGS AND EVENTS

11:00 Saturday 28th April
Meet at Potteric Carr Visitor Centre, SE589007
Leader: Alistair McLean 01142 782648

This is a joint meeting between Sorby Natural History Society, the British Dragonfly Society and Museums Sheffield. We will specifically be looking for *Brachytron pratense*, the Hairy Dragonfly; an early season riser, already known from this site, but will also be recording anything else we can while we're there.

The site management of Potteric Carr have kindly agreed to waive the entrance fee for this meeting in return for sharing records, but make sure to make yourself known to Alistair before attempting to access the nature reserve, or you'll be asked to pay full price.

10:30 Sunday 24th June
High Batts Private Nature Reserve
Meet in the Lay-by on the A6108, SE289761
Joint Leaders: Bill Hall and Keith Gittens 07903 449509

A joint meeting with Cleveland Naturalists. From lay-by we will drive down to the reserve. In the afternoon there should be time to visit some more ponds nearby.

YORKSHIRE DRAGONFLY GROUP

11:00 28th June and 6th September
Dragonflies at Woodhouse Washlands nature reserve
Meet at reserve entrance, Furnace Road, Sheffield, SK431855
Leader: Alistair McLean 01142 782648

A joint meeting between British Dragonfly Society, Sorby Natural History Society & Museums Sheffield. There has been some development on this reserve in the last 18 months, with a few channels and ponds being added. This will be an opportunity to see if any Odonata are taking advantage of these new features. On street parking is available on Furnace Road.

10:00 Saturday 14th July
Strensall Common
Meet in Galtres Road car park at SE648611
Joint Leaders: Keith Gittens and Anne Carter 07903 449509

A joint meeting with Freshwater Habitats Trust. A Flagship Ponds site, the walk will visit numerous ponds on the common and there will be opportunity to see the conservation work done at Worlds End.

10:00 Sunday 5th August
Skipwith Common NNR
Meet in reserve car park at SE669377
Joint Leaders: Anne Carter and Peter Hinks 07534 104564

A joint meeting with Freshwater Habitats Trust. A Flagship Ponds Site, the walk will visit various ponds across the reserve

10:00 Friday 27th July
Thorne Moor
Meet at the Thorne Retail Park, Ogden Road, Thorne, DN8 5UG,
Situated just off Junction 6 of the M18 motorway at SE678139
Leaders: Helen Kirk and Keith Gittens

BDS/YDG visit. From here we will be driving on to Thorne Moor, as a result it is important that anyone wishing to attend register to ensure they don't get left behind. We will be guided round the moors by Helen Kirk of the Thorne & Hatfield Moors Conservation Forum.

There are no facilities on site.

Thorne & Hatfield Moors SSSI has a combined land area of around 3,400 hectares or 7,500 acres in old money so a sizeable tract of mainly public land. Once a vast wilderness, despite much modified as a consequence of industrialised peat extraction for horticulture and reclamation for agriculture it still offers much to interest the naturalist keen to study any of the disciplines.

In terms of its invertebrate fauna, Thorne Moors is the richest peatland site in Britain. It contains the fourth largest assemblage of rare species of any British site irrespective of habitat. Hatfield Moor is in the top ten of such sites and is acknowledged as being under-recorded.

So far, the recorded insect fauna of both Moors exceeds 5000 species - around 25% of British fauna - with over 30 Red Data Book species and over 250 nationally scarce species. Six species are known from no other sites in Britain, including three that were new to Britain in 1992 and another *Streptanus okanensis* as recently as 2012. In terms of odonata around 21 species have been recorded.

The Moors are notable as the only British localities for the Red Data Book Category 1 (RDB1) ground beetle *Bembidion humerale* and the RDB1 pill beetle *Curimopsis nigrita*, both of which are rare throughout Europe. *Phaonia jaroschewskii*, a RDB2 Muscid is currently known only from the Moors in Britain.

Botanical interest includes royal fern, bog rosemary, cranberry, the insectivorous round leaved sundew and bladderwort, and the greater yellow-rattle.

Around 235 bird species have been recorded from on the moors, including around 90 breeding species.

You can learn more about the moors at www.thmcf.org. To register for the visit please contact Keith Gittens - 07903 449509 or email keith.gittens@yorkshiredragonflies.org.uk

Pools such as these seen along Green Belt are havens for dragons and damsels.

Image (copyright Martin Warne)

FIELD TRIPS AND EVENTS - 2017 SUMMARY

Pocklington Canal - 22 July

This walk, primarily for the Canal and River Trust, was led by Martin with help from Richard and Keith. Unfortunately, a series of massive downpours right up to half an hour before the start meant that only four people joined us, and despite gradual improvement in the weather very few Odonata were seen.

Martin Roberts

Strensall Common/Worlds End - 16th July 2017

This joint meeting with the Fresh Water Habitats Trust was held to give volunteers, who had worked on scrub removal at Worlds End, the chance to see the benefits of their labours and see some of the dragonflies, butterflies and other wildlife they were helping to conserve. In total 20 people attended and were not to be disappointed with 14 species of dragonfly seen. The walk covered a number of ponds across the common as well as visiting Worlds End. As well as typical heathland species, Black-tailed Skimmer and a lone Red-eyed Damselfly were recorded.

Keith Gittens

Jugger Howe/Harwood Dale - 13th August 2017

A good turnout for this joint meeting with Cleveland Field Naturalists on what was generally a bright sunny day. While we were unable to find one of the target species, Keeled Skimmer, the beck proved fruitful for Golden-ringed Dragonfly resulting in excellent close views including an egg-laying female. In the afternoon the group moved to Harwood Dale Ponds and although the best of the sun had gone the rides to the ponds gave close encounters with feeding Common and Southern Hawkers as they whizzed by.

Keith Gittens

COLONISATION OF NEW WATER AREAS

Goole brick ponds SE7322; Tom Pudding flash SE7223;

Aerial view of area before completion of the new drain 2015 -courtesy Google Earth

In 2014 – 15 a new link road (Tom Pudding Way) was constructed to the north of Goole brick ponds across land with planning permission for future development. To optimise the size of land parcels available a major land drain was filled in, and a new one excavated running parallel with the rail siding north of the brick ponds. Despite the best efforts of the contractors an area of land between the new road and brick ponds remained marshy and flooded.

By late spring of 2016 it was clear that this area (now christened Tom Pudding flash) was holding water all year round. Together with the New Sidings drain I could see the potential for Odonata and resolved to watch both areas.

The flash October 2017

In June 2016 a Little Ringed Plover was nesting on Tom Pudding Flash. This limited observations, but I had sightings of Black-tailed Skimmer, Broad-bodied Chaser and patrolling Emperors. The new drain produced similar records.

In 2017 both areas had some weed growth and were developing nicely. From June onwards, I walked the length of the drain two or three times a week. I again watched the Flash from one side only because of a nesting Little Ringed Plover.

After multiple Black-tailed Skimmer, Broad-bodied Chaser and Emperor sightings over both areas I advised others of my observations. From then onwards the Flash, in particular, was watched by Brian and Mark Smith, Paul Adams and I on a regular basis. This close scrutiny paid off with a male Red-veined Darter found towards the end of June by Brian and Mark. What was assumed to be the same individual was seen by myself and P. Adams over the next few days. As the year progressed most of the species that frequented the brick ponds area were observed on both the Flash and the New Drain.

On September 8th I found three immature Red-veined Darters at Tom Pudding Flash. Over the course of the rest of the month and into early October multiple sightings were made. Numbers ranging from three to 13 were seen most days, all teneral, both male and female. Breeding on site was the most obvious explanation and I eventually saw two tenerals above their exuviae, proof positive for me at least!

Both sites will continue to be watched, the drain is now a permanent feature and should provide good habitat. The future of the scrape is less certain but we will continue to observe and record with interest.

SPECIES LIST 2017	
ovi = ovipositing	
Tom Pudding Flash area	**Sidings Drain area**
Emerald Damselfly	Emerald Damselfly
Azure Damselfly	Large Red Damselfly
Common Blue Damselfly	Azure Damselfly – ovi
Blue-tailed Damselfly - ovi	Common Blue Damselfly – ovi
Common Hawker	Blue-tailed Damselfly – ovi
Migrant Hawker - ovi	Red-eyed Damselfly
Southern Hawker - ovi	Hairy Dragonfly
Brown Hawker- ovi	Common Hawker
Emperor - ovi	Migrant Hawker – ovi
Four-spotted Chaser - ovi	Southern Hawker – ovi
Broad-bodied Chaser - ovi	Brown Hawker – ovi
Black-tailed Skimmer - ovi	Emperor - ovi
Black Darter - ovi	Four-spotted Chaser – ovi
Common Darter - ovi	Broad-bodied Chaser – ovi
Ruddy Darter	Black-tailed Skimmer – ovi
Red-veined Darter	Black Darter
	Common Darter – ovi
	Ruddy Darter

Peter Hinks

UNUSAL INTERACTION BETWEEN A DARTER AND A SKIMMER

Whilst visiting Three Hagges Wood-Meadow, near Escrick, on 16th August 2017 with Martin Roberts I witnessed an unusual interaction between two dragonflies. Unfortunately, the pair remained in view for just a few seconds and therefore I gained only a limited impression of their behaviour.

I was standing near the pond when I spotted two dragonflies flying joined together in an apparent wheel. When viewed through binoculars it was clear that they were of different species. The individual in the upper position was a Darter with a reddish abdomen. I concluded that it was probably a male Common Darter (*Sympetrum striolatum*) because we had seen a couple of Common Darters around the pond but no Ruddy Darters (*Sympetrum sanguineum).* The individual in the lower position had a blue abdomen with a green thorax and from its shape and size I concluded it was a male Black-tailed Skimmer (*Orthetrum cancellatum*). We did not see any other Black-tailed Skimmers or indeed any other Odonata (except for Common Darters) during this visit to the reserve.

I was so focussed on trying to identify the two individuals that unfortunately I did not properly record any other aspect of this unusual behaviour (and did not manage to take a photograph) before the pair flew off, still joined together. I therefore cannot definitely confirm that they were orientated as if in a copulatory wheel, i.e. with the Skimmer ventral side up and facing the opposite way to the Darter. However, I find it hard to imagine how they could fly together in a wheel in any other way without a clash of wings. Indeed, in the absence of an apparent tussle it appeared more likely to be a mistaken mating attempt, involving two males of different species, rather than primarily an aggressive encounter.

Although I have not been able to find any published account of two male Odonata in a wheel position, the occurrence of a male in tandem with a male of the same or different species is known to occur occasionally (see references in Rowland and Shillaker 2008). There are also reports of tandem, and more rarely the wheel position, between male and female Odonata of different species (Bick and Bick 1981, Corbet 1999, Miller and Fincke 2004). It is notable that Libellulids, including Sympetrum species, figure prominently in Bick and Bick's listing of male-female heterospecific pairing (in tandem or wheel position) of individuals from the same genus. Corbet (1999) also referred to the prevalence of male-female heterospecific pairing involving Sympetrum males. He noted that once a male-female heterospecific tandem had been formed copulation occurred more often amongst Libellulids (which have simple male anal appendages) than among Lestids (which have specialised anal appendages). The apparent wheel that I observed may have been facilitated by the simple anal appendages of the male Darter, allowing the Darter to grip the Skimmer to form an initial tandem. The similar abdominal lengths of the two individuals would also have been conducive to wheel formation. The range in abdominal lengths for the two species is reported to be: Common Darter (25-30 mm), Black-tailed Skimmer (29-35 mm).

It is notable that two tandems between a male Spotted Darter (*Sympetrum depressiusculum)*, a smaller species than the Common Darter, and a Black-tailed Skimmer have been reported at roosting sites in southern France ; one was with an immature male Skimmer and one with a mature female Skimmer (Rehfeldt 1993). In total 26 heterospecific tandems involving male Spotted Darters and other Anisopteran species were observed; the majority were with Libellulids of either sex. However, no copulations or attempted copulations were noted. Heterospecific tandem formation at the roosting site was associated with male Spotted Darters being active before dawn, at low temperatures, when other species were still immobile.

Brooks and Cham (2014) proposed that anomalous mating attempts by Odonata occur during periods of high population density when the mating urge of 'frustrated' males is at its peak. However, it could be argued that the few Common Darters around the Escrick pond led a 'frustrated' male to try to mate with the male of another species of dragonfly.

Whilst it is plausible that the male Common Darter could have formed an initial pre-copulatory tandem with the male Black-tailed Skimmer, it is less clear why the male Skimmer would then flex its abdomen to form an apparent wheel. The latter behaviour could have been an attempt by the Skimmer to push itself free from the Darter. Indeed whilst observing a male-male tandem between a Scarce Blue-tailed Damselfly (*Ischnura pumilio*), in the leading 'male' position, and an Azure damselfly (*Coenagrion puella*) the Azure was occasionally seen to arch its abdomen towards the other damselfly (see Paine 1992). This behaviour may have represented an attempt by the Azure to break free.

To conclude, two dragonflies of different species (probably a male Common Darter and a male Black-tailed Skimmer) were seen flying joined together in an apparent wheel-like orientation. No other reports of two male Odonata in a wheel position could be found. However, there is a report of male Spotted Darters in tandem with male and female Black-tailed Skimmers and other Libellulids.

References

Bick GH and Bick JC (1981) Heterospecific pairing among Odonata. Odonatologica 10(4), 259-270.

Brooks S and Cham S (2014) Field guide to the dragonflies and damselflies of Great Britain and Ireland. British Wildlife Publishing.

Corbet PS (1999) Dragonflies, behaviour and ecology of Odonata. Harley Books, Colchester.

Miller MN and Fincke OM (2004) Mistakes in sexual recognition among sympatric Zygoptera vary with time of day and color morphism (Odonata: Coenagrionidae). International Journal of Odonatology 7 (3), 471-491.

Paine A (1992) Notes and observations. Journal of the British Dragonfly Society 8(1), 14.

Rehfeldt GE (1993) Heterospecific tandem formation in *Sympetrum depressiusculum* (Selys) (Anisoptera:Libellulidae). Odonatologica 22(1), 77-82.

Rowland I and Shillaker R (2008) Male-male tandem in the Banded Demoiselle (*Calopteryx splendens*). Skimmer, 16-18.

Richard Shillaker

Yorkshire Dragonfly Group On-line

Check out the website for the latest news, first sightings of the year, field trip diary, dragonfly locations to visit and how to submit your records.

To download the latest edition of Skimmer please contact Martin Roberts for password. Previous issues are also available.

www.facebook.com/groups/yorkshiredragonflies/

@BDS Yorkshire

www.flickr.com/groups/yorkshiredragonflies.com

www.yorkshiredragonflies.org.uk/?feed=rss2

Female Red-eyed Damselfly eating a female Common Blue Damselfly

June Gittens

DRAGONFLIES

AT DAWN

Whilst on holiday in Somerset in the first week of June we were advised of a Four-spotted chaser roost at Ham Wall Nature Reserve. This apparently occurred for only two weeks of the year so we were interested to learn more. We were given explicit instructions and directions and decided to investigate the following day.

Getting up at 3:30 am was a bit of a struggle but we were quickly on our way and arrived at the site car park in good time. Surprisingly there were also a number of bird watchers just parking up.

We set off following the directions on the 20 minute trek to the site. This ended with a walk around two sides of a large reed bed and lake. In the designated corner we found one lone female photographer who confirmed we were in the right place.

As daylight dawned we were greeted with the sight of hundreds of four-spotted chasers making their way up the reed stems – many in close proximity to each other. Also, many still covered in dew.

Apparently, it was usual for the them to lift of from the top of the reeds between 5:00am and 5:30am as soon as the sun was strong enough to warm up their flight muscles. On this particular day, however, there was quite a bit of cloud about which meant the sun kept disappearing and temperatures were slow to rise.

This delayed proceedings somewhat and meant we had plenty of time for good views and to take many photographs. Around 7:00am it was finally warm enough for them to begin taking their first flights of the day.

With the show over we decided to walk back round the other two sides of the lake on our return journey to the car park. Both sides were bordered by scrub and reeds and from these large numbers of four-spotted chasers flew out as we passed. We estimated there must have been over a thousand insects in this small area alone.

We had an amazing outing and were still back at our holiday cottage in time for breakfast!

Keith and June Gittens

THE MIGRANT HAWKER UNUSUAL LIFE HISTORY

Given that I have a pondless garden, it is not surprising that I am very fond of the Migrant Hawker (*Aeshna mixta*). This small hawker is the only dragonfly that I can count on to make it to my garden list every year. It also allows for leisurely observation as they hawk over the garden or the tenfoot, occasionally perching on low bushes. Migrant Hawkers appear in the garden from the last week of July, and they are around until the end of October, so they can be regarded as a late summer dragonfly with a long flight season. They hawk at the height of tree canopies, patrolling an area repeatedly, often rising to catch an insect, their abdomen held at an upward angle, with a slight droop at the end.

Their late flight period and social, non-aggressive behaviour are unlike other hawker dragonflies in the UK. When they hunt, it is not unusual to see several individuals together, either ignoring each other or not being overtly aggressive. They can gather in large hunting swarms in sheltered glades or hedgerows. Even when resting after hunting or during overcast conditions, it is common to see that they settle near each other in pairs or small groups, hanging from branches while orienting themselves to the sun (Figure 1).

Figure 1. *Resting Migrant Hawkers at Honeysuckle Farm, Hornsea. A female in the foreground, with a male on the background).*

The reasons for their distinctive behaviour and phenology appear to lie in their ecology. Migrant Hawkers have a widespread distribution, from the Mediterranean to Asia to Japan. Although in the UK they breed in permanent waters in gravel pits, canals, lakes and ponds, in the south of their range they often develop in temporary ponds, which are recurrently or unpredictably dry in the summer. These habitats cannot sustain populations of slow developing dragonfly species, as their larvae would be unable to survive the dry season. Migrant Hawker's ability to thrive there stems from their very fast life cycle: after oviposition in the autumn, eggs undergo a period of winter rest (diapause). Larvae hatch in late winter and develop in a single season, growing rapidly and metamorphosing and emerging in late summer of the same year. When the adults emerge, the ponds where they developed may be about to dry out, so the adults do not mature immediately. Instead, they have evolved a delayed maturity, and as immature adults, will hunt away from water for some time - up to four or five months in the south of their range. They will return to ponds and mature after autumn rains create breeding habitats, therefore they have one of the longest adult lifespans in dragonflies.

During their immature stage Migrant Hawkers are great wanderers and migrate in both latitude and altitude to new areas where new ponds can be found or weather conditions are more benign to spend the hot summer months foraging. In Algeria and Russia, they breed in lowland ponds, and undergo a migration to upland woodland. Their return autumn migration to lowlands has been documented using bird traps in high mountain passes in Kazakhstan. This strong migratory character is evident in the UK, with compelling evidence of influxes of hundreds of individuals, mainly concentrated on the east and south coasts, coinciding with weather favouring movement from the continent. An apparent influx at Spurn Point coincided with a migrant bird fall. The extent of the immature imago stage appears to be shorter in the UK (seven to ten days according to McGeeney), but more research is needed. It is unclear if the local breeding UK individuals migrate much, I would not expect them to. It would be interesting to test if delayed maturation is a response to developmental temperature, so that individuals born in the UK could delay maturation or not depending on the weather conditions. It is also unknown if there is genetic variation across their range regarding delayed maturity and migration ability.

When away from water or during migration, immature Migrant Hawkers have no reason to be aggressive to each other - there is no territorial behaviour or male competition for receptive females - hence the feeding swarms on the plentiful insects. But even when breeding, territoriality is not a feature of the species.

Migrant Hawkers underwent a range expansion in the UK and northern Europe, which is still ongoing. They were rare north of the Humber in 1996, with the first East Yorkshire record as recent as 1983 but are now widespread in England, Wales, and also found in Scotland. In 1997 according to Parr they colonised Ireland. My first record was on September 2001 in my garden in Hull. It is likely that increasing temperatures due to climate change are allowing this species to complete its cycle regularly in the UK - in particular warmer water during larval development - and they have spread north as most other British dragonflies. Given the scarce breeding records, most of the individuals we see in Yorkshire are probably migrants from southern latitudes boosting the local population, but how far do they travel? Are there return migrations like in their southern range? There is so much to find out about this species. Given the recent technological advances shedding light on the migratory behaviour of other migrant dragonflies such as miniaturised radio transmitters (on the Green Darner, *Anax junius*) or isotopic analyses (on the Wandering Glider, *Pantala flavescens*), I can't wait to learn of future research on the migratory patterns of the Migrant Hawker.

An early version of this article appeared in my blog Bugblog (http://abugblog.blogspot.co.uk/2017/09/the-migrant-hawker-unusual-life-history.html)

Many thanks to Dick Shilllaker, who invited me to prepare this article, and kindly provided me with detailed notes from some literature of which I was not aware, shared articles and provided feedback on an earlier version of the article.

Bibliography

Ashton P (2013) Dragonflies of South-east Yorkshire. Privately published.

Brooks, S. and S. C. Cham (2014) Field guide to the dragonflies and damselflies of Great Britain and Ireland. British Wildlife Publishing. Entry for Migrant Hawker by A. McGeeney.

Borisov, S. N. (2009). Study of dragonfly (Odonata) migrations in the Western Tien Shan mountains using ornithological traps. *Entomological review*, **89**: 1025-1029. (only English Summary, article in Russian).

Hickling, R., Roy, D. B., Hill, J. K., & Thomas, C. D. (2005). A northward shift of range margins in British Odonata. *Global Change Biology*, *11*: 502-506.

Hobson, K. A., Anderson, R. C., Soto, D. X., & Wassenaar, L. I. (2012). Isotopic evidence that dragonflies (*Pantala flavescens*) migrating through the Maldives come from the northern Indian subcontinent. *PloS one*, *7*(12), e52594.

Merritt, R., Moore, N.W., and Eversham, B.C. 1996. *Atlas of the dragonflies of Britain and Ireland*. HMSO. Available at: http://nora.nerc.ac.uk/7785/1/Dragonflies.pdf

Muñoz-Pozo, B., and M. Ferreras-Romero. (1996) Fenología y voltinismo de Aeshna mixta Latreille, 1805 (Odonata, Aeshnidae) en Sierra Morena (Sur de España). *Boletín de la Real Sociedad Española de Historia Natural. Sección Biológica.* 92: 239-244. English summary. In Spanish.

Parr, A. High numbers of migrant hawkers, Aeshna mixta (Latr. 1805) in Britain during 2014. *Atropos* **54,** 29–37 (2015).

Samraoui, B., Bouzid, S., Boulahbal, R., & Corbet, P. S. (1998). Postponed reproductive maturation in upland refuges maintains life-cycle continuity during the hot, dry season in Algerian dragonflies (Anisoptera). *International Journal of Odonatology*, **1**: 119-135.

Smallshire D. & A. Swash (2004) Britain's Dragonflies. WILDGuides.

Wikelski, M., Moskowitz, D., Adelman, J. S., Cochran, J., Wilcove, D. S., & May, M. L. (2006). Simple rules guide dragonfly migration. *Biology Letters*, **2**: 325-329.

Africa Gómez

WATCHER'S WATCH

"To-day I saw the dragon-fly
Come from the wells where he did lie
An inner impulse rent the veil
Of his old husk: from head to tail" ***Alfred, Lord Tennyson***

"The Southern Hawker is a lowland insect common in Southern England and Wales and is now spreading northwards. It is frequently seen round farm ponds, small lakes and canals often breeding near human habitation" (Askew, 1988)
Its presence in Huddersfield was first recorded in 2005 when one male was observed at Blackmoorfoot Reservoir on July 14th and another on August 18th (M. Denton)
The species was recorded in 2006, again at Blackmoorfoot - single males on July 12th, 13th and 15th, two males on the 16th, and one on the 17th. (M. Denton and C. Horne)

There were no records in 2007. In 2008 on July 10th.and on September 17th. at Bradley Golf Course a female was observed ovipositing. No date is given but in 2009 at Thunderbridge two insects were recorded by S. Graham. There were no records for 2010.

In Stocksmoor on August 22nd. 2011 there were two males, one pair in cop. and one female ovipositing. A single female was seen at Seventy Acres on September 5th. 2012.

View of pond

On August 8th. 2013 a single male was observed at Armitage Bridge.
Single males were noted in 2014 at Blackmoorfoot on August 3rd. and 4th. (G. Kaye.)
A single male was recorded on September 1st. 2015 at Upper Clough.

I live two and a half miles from Huddersfield town centre on a small estate of twenty houses. Eight of these including mine have established woodland as part of their gardens.

My neighbour created a pond in 1993 which is approximately 15 feet by 6 feet 6 inches. It is planted with one *Iris pseudacorus* Yellow Flag, *Lemna minor* Duckweed and *Nymphaea alba* Water-lily, the latter covering at least 50% of the water surface. Marginal vegetation consists of *Astilbe* and *Primula* species with various grasses and sedums.

There is a fluctuating population of goldfish (depending on the heron'sappetite) *Gyrinus* sp.Whirligig Beetles, *Gerris* sp. Pond Skaters, *Asellus* sp. Hog Louse, *Rana temporaria* frogs, *Bufo bufo* toads and *Triturus vulgaris* newts.. The first odonate to be recorded from the pond was *Pyrrhosoma nymphula* Large Red Damselfly in 1995.

Over the past 30 years the following damselflies have bred in the pond:- *Coenagrion puella* Azure Damselfly, *Enallagma cyathigerum* Common Blue Damselfly, *Ischnura elegans* Blue-tailed Damselfly and *Pyrrhosoma nymphula* Large Red Damselfly. Singletons of *Aeshna grandis* Brown Hawker, *A. juncea* Common Hawker and *Sympetrum striolatum* Common Darter have been observed on the odd occasion.

Dragonflies are not normally on my mind when preparing for the Sunday Morning Service at church. However, on Sunday July 17th. there was a frantic ringing of doorbell – neighbour on door step with finger still on bell, "Jill come quick there's a huge black and yellow dragonfly on the pond". First thought - is it, it can't be *C. boltonii,* never been recorded in this area and wrong habitat for a self-respecting Golden-winged Dragonfly anyway. Give hurried look at clock and rush out with fingers crossed hoping it will not have flown. The insect is still there hanging onto the edge of a water lily leaf. It is not black and yellow but brown and yellow, not huge but still quite large to the uninitiated. Is it an immature *Aeshna juncea*? I kneel down to take a closer look, doesn't look like *juncea* and certainly isn't *grandis*, need to have a photo. Shoot back home for camera, so excited I cannot hold it steady. See exuvia underneath the leaf but cannot quite reach it without falling into pond. Really frustrated! I arrive at church out of breath, dishevelled and with dirty knees!

The following day had another look at the pond and found one exuvia and two tenerals. The next day hit the jackpot with five exuviae and three adults. On the 4th. day there were two exuviae and two adults whilst on 5th. day there was one exuvia and one imago. All had emerged on the underside of lily pads.

On July 22nd. one was emerging on a lily flower, the only one so to do. Nothing more happened for eight days then I decided to do a pond dip not expecting to find anything but out came one nymph, three exuviae from undersides of lily pads, and two emerging insects. From the nymph and the exuviae I was finally able to confirm the identity as *Aeshna cyanea.* July 31st, there was one exuvia and two insects.

Andrew McGeeney (Brooks, 1997, Cham, 2007) state "When the larvae are fully mature they climb up a reed or dead twig on the pool margins" Oh no they don't! In Huddersfield they have not read the book. The single tall plant in the pond-Yellow Flag- was ignored completely. At my suggestion three stakes were placed in strategic positions on which the larvae could climb out of the water to emerge. This proved to be a waste of time and effort only three larva taking advantage of our thoughtfulness. All the others continued to emerge on the underside of the lily pads.

Throughout August with the assistance of Justin I watched the pond every day, noting times of emergence, position on vegetation and collecting exuviae. *With hindsight I should also have taken note of the weather conditions. On the third of August three exuvia, and two insects were observed. Two exuviae were collected on the 25th of that month.

The last exuvia was collected on September 5th.

In total we collected 33 exuviae, 15 female, four male and 14 too badly damaged to sex.

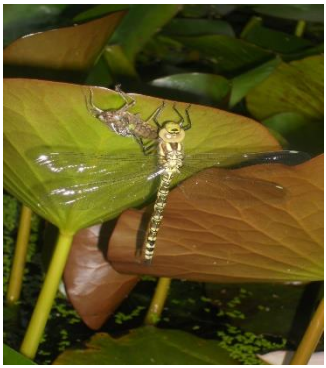
*Although I did not keep a note of the weather, in retrospect the general impression both Justin and myself have is that on good sunny warm days the insects took a longer time to fly than those which emerged on rainy days. One insect emerging on a really good day was the subject of much speculation taking nearly twenty four hours before it finally decided to fly.

7:54 am

8:07 am

3:50 pm

The only one to emerge on the flower



Underside of Lily pad

Date	Exuvia/e	Imago	Nymph
July			
17	1	1	
18	2	2	
19	5	3	
20	2	2	
21	1	1	
22	1	1	
30	4	2	1
31	1	2	

Times of Emergence were as follows:
Morning- 3:50, 5:53, 7:54, 8:07, 8:20, 9:27, 10:50. Afternoon 14:32, 19:59.

BIBLIOGRAPHY

Askew, R. R. 1988 The Dragonflies of Europe. Harley Books.
Brooks, S 1997 Field Guide to the Dragonflies and Damselflies of Great Britain and Ireland.
Cham. S. 2007 Field Guide to the larvae and Exuviae of British Dragonflies.
McGeeney in Brooks, S. 1997.

ACKNOWLEDGEMENTS and THANKS

To Michael Denton, Chris Horne and G Kaye for the records from Blackmoorfoot and Steve Graham for the record from Thunderbridge. To Justin, my neighbour, who joined me on my early morning vigils, collected exuviae and waited with great patience to see the head down upending and was so delighted and excited when he actually saw it happen.

Jill Lucas

WANDERING GLIDER – *Pantala flavescens*

Since retiring six years ago I've been lucky enough to travel the world and enjoy many natural wonders, including my passion for dragonflies. With over 5000 species of Odonata out there (and many more yet to be catalogued) I've only scratched the surface so far, but already at the top of my list is this one, the Wandering Glider. I first saw it at a swimming pool in Zanzibar and was immediately struck by its effortless flight: two or three shallow flaps then a few metres of gliding, repeated over and over again. With camera ready I followed it around for maybe half an hour but it never seemed to tire or settle until shooting off elsewhere. Since then I've learned a lot more about this astonishing insect and the reason behind its unusual flight.

It belongs to the Libellulids, the largest Odonata family with over 1000 species globally, including some of our own like the beautiful Four-spotted Chaser. Wandering Glider is described by some experts as the most successful species amongst all of the Odonata, but why? Well, for starters it's one of the only dragonflies to be found on

every continent, except Antarctica. Secondly, its wings are superbly adapted for effortless, gliding flight being unusually long (extending to S5) and with a huge surface area in proportion to its body. But why does it need this adaptation when the majority of successful Odonata get by without it? Recent research has provided an amazing answer: this animal now holds the insect record for the longest migration, previously held by the American Monarch butterfly at 5000 miles. Hobson et al 2012, (in the BDS Atlas 2014) found that Wandering Gliders migrate each year between India and East Africa (including Zanzibar) by hitching a ride on the prevailing winds, totalling a minimum 8800 miles (4400 coast to coast). Imagine that, a small insect crossing over 4000 miles of ocean, twice a year, without stopping! It flies in large swarms from India, when the dry season starts, across to East Africa (and Zanzibar) with the Monsoon winds, using the wetlands to breed. The life cycle is completed before the winds reverse direction and the dry season begins in East Africa.

The newly-hatched adults join other surviving mature adults and hitch a lift back to India in time for the wet season there so breeding can resume. It's a perilous journey each way and there are many casualties caused by the severe weather and predators like Bee-eaters that find them easy to catch, but enough survive to make this species so abundant and successful. Contrast this incredible journey with many of our species that rarely stray far from the local pond! Each animal finds its own survival strategy through natural selection. Darwin would have been astonished to learn about this one!

As regards British records, we are too far away from the strongest populations across the Tropics where they use the powerful inter-continental winds to find wet places to breed. The BDS has three confirmed records, the last in Kent in 1989, but hints that they may have been accidentally brought to our shores by shipping. However, there are more recent records spreading out from the Mediterranean so, who knows, with a strong hot southerly heat wave for a month or so this summer we may see some here, or more likely some of the other northward-moving species this summer. We've had the resurgence of Red-veined Darters last year and Small Red-eyes seem well established now. There was a Scarlet Darter in Somerset last year and the Bempton expert (Trevor Charlton) told me he'd seen a Lesser Emperor at Bempton last summer and a Yellow-winged Darter there a couple of years back, so anything is possible.

Willow Emeralds and White-legged Damselflies aren't too far away either. Fingers crossed and happy hunting 2018!

Chris Bull

Ruddy Darter , World's End, Strensall Common

Paul Ashton

Calopteryx virgo	Beautiful Demoiselle	Restricted Range
Calopteryx splendens	Banded Demoiselle	Widespread
Lestes sponsa	Emerald Damselfly	Widespread
Lestes dryas	Scarce Emerald Damselfly	Ex-resident
Pyrrhosoma nymphula	Large Red Damselfly	Widespread
Coenagrion puella	Azure Damselfly	Widespread
Enallagma cyathigerum	Common Blue Damselfly	Widespread
Ischnura elegans	Blue-tailed Damselfly	Widespread
Erythromma najas	Red-eyed Damselfly	Restricted Range
Erythromma viridulum	Small Red-eyed Damselfly	Restricted Range
Ceriagrion tenellum	Small Red Damselfly	Vagrant
Coenagrion pulchellum	Variable Damselfly	Restricted Range
Aeshna juncea	Common Hawker	Widespread
Aeshna mixta	Migrant Hawker	Widespread
Aeshna cyanea	Southern Hawker	Widespread
Aeshna grandis	Brown Hawker	Widespread
Anaciaeschna isosceles	Norfolk Hawker	Vagrant
Anax imperator	Emperor Dragonfly	Widespread
Anax perthenope	Lesser Emperor	Migrant
Anax ephippiger	Vagrant Emperor	Vagrant
Brachyton pratense	Hairy Dragonfly	Restricted Range
Cordulegaster boltonii	Golden-ringed Dragonfly	Restricted Range
Cordulia aenea	Downy Emerald	Vagrant
Libellula quadrimaculata	Four-spotted Chaser	Widespread
Libellula fulva	Scarce Chaser	Ex-resident
Libellula depressa	Broad-bodied Chaser	Widespread
Orthetrum cancellatum	Black-tailed Skimmer	Widespread
Orthetrum coerulescens	Keeled Skimmer	Restricted Range
Sympetrum striolatum	Common Darter	Widespread
Sympetrum fonscolombii	Red-veined Darter	Migrant
Sympetrum flaveolum	Yellow-winged Darter	Migrant
Sympetrum sanguineum	Ruddy Darter	Widespread
Sympetrum danae	Black Darter	Widespread
Sympetrum vulgatum	Vagrant Darter	Vagrant
Leucorrhinia dubia	White-faced Darter	Ex-resident