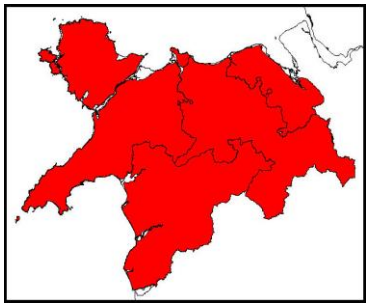
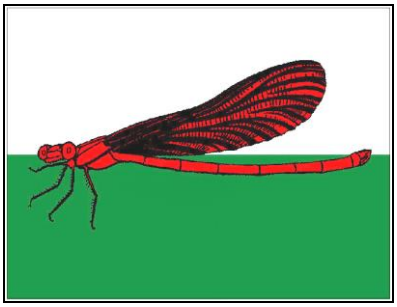


Y Fursen

North Wales Dragonfly Newsletter No. 93

2nd November 2017



Odonata news and events from across the vice counties of Anglesey, Merionethshire, Caernarvonshire, Denbighshire and Flintshire

Hi all,

We may well be witnessing the dying embers of our dragonfly flight season but it may well be worth keeping an eye out for stray hawkers that might be on the wing during the winter months. The Vagrant Emperor (*Hemianax ephippiger*) now seems to be reaching Britain from North Africa on a more regularly basis.

Dragonflies may be able to withstand a 30 g force whilst in flight!

We all know that dragonflies are incredible animals but this sounds startling! A post on the Odonata-l Digest newsletter (Vol. 162, Issue 2) by Henry Curry, Honorary Secretary, British Dragonfly Society on the 13th September 2017 was prompted by a request from a UK (BBC) researcher regarding the amount of 'G' forces a dragonfly can withstand. The query is based around quoted values of 30G and the researcher needed to check if this is valid or exaggerated. References to the original quote are:

1.https://books.google.co.uk/books?id=9hv4O9LWngC&pg=PA13&lpg=PA13&dq=studies+on+dragonfly+g+force&source=bl&ots=pT8q3HK4m6&sig=lfVv0oYGbbH3e2wKh1dvHbs2Sfs&hl=en&sa=X&ved=0ahUKEwio9eHYJDWAhUCJMAKHSRrAT4Q6AEIQDAE#v=onepage&q=studies%20on%20dragonfly%20g%20force&f=false - 'Andrew Reinhard designed a new G-suit after researching the dragonfly, the only animal that can withstand 30 times the gravitational force of Earth while flying. Because the circulatory system of the dragonfly is encased in fluid, Reinhard designed a fluid-filled suit that could absorb the increased gravitational force associated with flight manoeuvres.'

2.http://www.newsweek.com/dragonfly-suit-152937 - 'Andreas Reinhard, a 45-year-old former pilot in the Swiss Air Force, has spent 13 years and millions of dollars in venture capital developing a G suit that operates in a completely different way. He calls it the Libelle, the German word for dragonfly, because it's based on the same principles that protect a dragonfly's innards from the 30-G accelerations the insect generates in flight'.

PondNet Dragonfly Survey by Malcolm Watling

Malcolm writes:

Having seen Allan's note in "Y Fursen" No. 91, I contacted Hannah Shaw of the Freshwater Habitats Trust, and chose a nearby pond, about 1hr. 45min. hike up from the car park at the north end of Llyn Tanygrisiau. On the 2nd May I made an exploratory visit

to find a good route up. Sometimes the green-dotted "footpaths" on the OS maps aren't the best ways. This was confirmed yet again, but once a good height was reached it was easy to see a better way to return, which I used as my route for subsequent visits. On this occasion I saw just one odonate, a *Pyrrhosoma nymphula,* teneral female, near a pool to the north of the main pond. The pond is at a height of just over 350m on the south-east slopes of Moelwyn Bach at SH668431. It is irregularly shaped, about 160m long, in an area of valley bog on one of several platforms left by the erosion of the north-west-dipping strata of the mountain.

The method for this survey was to make five visits, one each month from May to September, noting the weather conditions and making a transect-type count round the edge. Here are the results for the main visits:

Visit No.1, 26th May. The day had a cloudless sky, temperature of 22°C with a stiff southerly breeze. The species seen were five *Libellula quadrimaculata*, nine *P. nymphula* with two tandem pairs, and one *Enallagma cyathigerum*.

Visit No. 2, 19th June. A hot, occasionally hazy day, 29°C with intermittent light SW breeze. Two *P. nymphula* , ten *E. cyathigerum*, one tandem pair, five *L. quadrimaculata*, and one male *L. depressa*, which appeared a couple of times, skirmished briefly with the others and flew away.

Visit No.3, 13th July. This was a sunny day, 21°C but a strong SW wind prevented voluntary flying by dragonflies. Searching the large boggy surrounding area disturbed three *Lestes sponsa* and an *E. cyathigrum*. As well as these, four teneral damselflies were seen but not identified.

Visit No.4, 22nd August. A very warm humid day, cloudy with sunny intervals, 25°C. Recent heavy rain had increased the depth of the pond and water-logging of the surrounding bog areas, making access to the north shore not possible. One very light short shower. Nine *Sympetrum danae*, one tandem, three *L.sponsa*, one tandem, one *E. cyathigerum* tandem pair and one *Cordulegaster boltonii*, ovipositing.

Visit No.5, 26th September. Cloudy with a few sunny intervals, 18°C. Very little wind. Six *S. danae* and three *Aeshna juncea*, one ovipositing. On this visit Hannah came to do the environmental survey; water quality, vegetation and other aquatic life. One larva each of *A.* cf. *juncea* and *L.* cf. *quadrimaculata* were found.

The numbers and species seen were not spectacular, but certainly reflected my experiences so far in the mountains, and the results will go forward to build a picture of dragonfly pond distribution nationally.

A fossil damsel named after BDS Patron Sir David Attenborough

(Reproduced from the BDS September 2017 Newsletter)

Sir David Attenborough received a belated 90th Birthday present last month: *Mesosticta davidattenboroughi*, a newly discovered extinct species of Damselfly, dating back to the mid-Cretaceous, has been named in his honour. This new species of Shadowdamsel (Family Platystictidae) was found fossilized in Burmese amber, in the Hukawng Valley of Kachin Province in Myanmar.

"Dragonflies in amber are extremely rare and the recent discoveries by my Chinese colleagues are a new window on the past" said the study's co-author Edmund Jarzembowski, a scientist at the Natural History Museum in London. "Sir David was delighted because he is not only interested in the story of amber, but also is a president of the British Dragonfly Society."

Amber is the fossilized form of tree resin; when a tree's bark is damaged, resin is produced to seal and sterilise the wound. In doing so, organic matter, such as small insects, can become entrapped in the sticky substance and are preserved as the resin hardens over millions of years.

Fossil records of Odonata are relatively uncommon in comparison to other insects, and this specimen is only the third-known fossil species of Platystictidae.
Through advanced photo-technology the study's team where able to identify notable differences in wing structure of *M. davidattenboroughi* compare to other fossils, in particular, its short wing length, which confirmed its status as a new species and the first fossil group of modern Platystictid damselflies.

Mesosticta davidattenboroughi preserved in mid-Cretaceous amber. Copyright Zheng, Wang, Nel Jarzembowski, Zhang & Chang, 2017.

A female *Cordulegaster boltonii* and Wolf Spider in ditch in the Nantmoor area on the 1st September 2017. Photo Peter Drake.

Aeshna mixta male in flight at Rhuddlan Nature Reserve, 30th August 2017. Photo Eifion Griffiths.

Aeshna mixta male in flight at Rhuddlan Nature Reserve, 30th August 2017. Photo Eifion Griffiths.

Allan

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