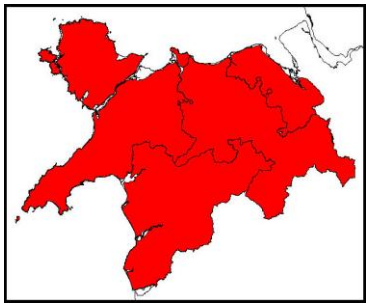
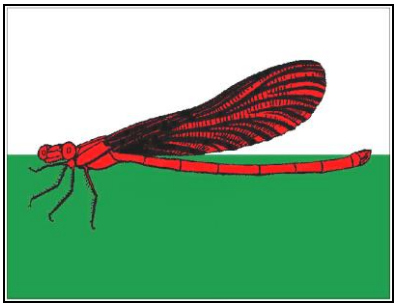


Y Fursen

North Wales Dragonfly Newsletter No. 94

22nd May 2018



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

Hi all,

New Small Bluetail (or Scarce Blue-tailed Damselfly) site found

On the 19th May Andrew Graham found another new site for *Ischnura pumilio*, this time at Glaslyn Marshes [SH590386] between Minffordd and Porthmadog. He sent me two photos of the lovely orange teneral female *aurantiaca* phase.

Teneral female *Ischnura pumilio*, Glaslyn Marshes, 19th May 2018. Photo Andrew Graham.

I've never been to this site myself but the species has been known from the general area. It is close to the sites of two 1976 records, one by Pip Miles near Penrhyndeudraeth [SH614390] and one by Alan Stubbs at Llyn Ystumllyn [SH527387], 4 km west of Porthmadog. I've visited both sites in more recent years without finding the species.

Andrew seems to have a particular knack of discovering the species at previously unknown sites. He first found it at a small pond in Y Lordship forest, mid-Merionethshire (*see* North Wales Dragonfly Newsletter No. 33 for 17th June 2009). He was also in on the

discovery with Sue Loose at Minera Quarry (*see* NWDN No. 87 for 15th June 2016). Both these sites are far removed from anything previously known. As I wrote in Newsletter No. 33, I was inclined to the belief that 'the species is much more common and widely distributed than current records would indicate'. But since 2009 new sites have rarely come to light despite intensive surveying.

First confirmed exotic species for North Wales

Elizabeth Jones of Old Colwyn sent me photos on the 26th March of a teneral damsel that she thought had flown into her daughter's turtle tank the previous day. She was intrigued to know what the species was. It was too early for one of our native species to emerge naturally and on seeing the photos immediately thought of a foreign species. On conferring with Adrian Parr, the BDS Migrants Office, I agreed it was a teneral male of *Ischnura senegalensis*, a common species in ponds across sub-Sarahan Africa and Asia. So the likelihood is that the damsel had emerged from the indoor turtle tank thanks to Elizabeth having previously introduced some new exotic plants into the tank from the water gardens in Towyn. According to Adrian, at that time the North Wales find was the fifth to emerge in the UK during 2018! After taking photos, Elizabeth eventually released the damsel back outside where it flew off. It wouldn't have fared well in our March climate.

Teneral male *Ischnura senegalensis*. Old Colwyn. 26th March 2018. Photo Elizabeth Jones

Teneral male *Ischnura senegalensis*. Old Colwyn. 26th March 2018. Photo Elizabeth Jones

Copulating *Ischnura senegalensis*, coastal Kampong Bagan Pasir, Malaysia, 29 August 2013. Photo Allan Brandon.

Thanks to the importation of exotic pond vegetation from places like SE Asia for use in indoor fish aquariums etc. there are a number of exotic odonate species that can emerge in this country and elsewhere. Another common one is *Crocothemis servilia* (Oriental Scarlet Darter), a brilliant scarlet darter native to tropical Asia and very similar to the European and African species *C. erythraea*. *C. servilia* has now managed to colonise parts Florida, Hawaii and Jamaica in this way. We have had our own probable larva of this species in 2010. In November of that year North Walean John Chapman discovered a monster in his indoor heated aquarium that turned out to be a 15 mm long larva of a darter dragonfly (*see* NWDN No. 50 for 10th May 2011). The tank was stocked with exotic weed.

Libellulid larva in fish tank somewhere in North Wales, November 2010. Photo John Chapman

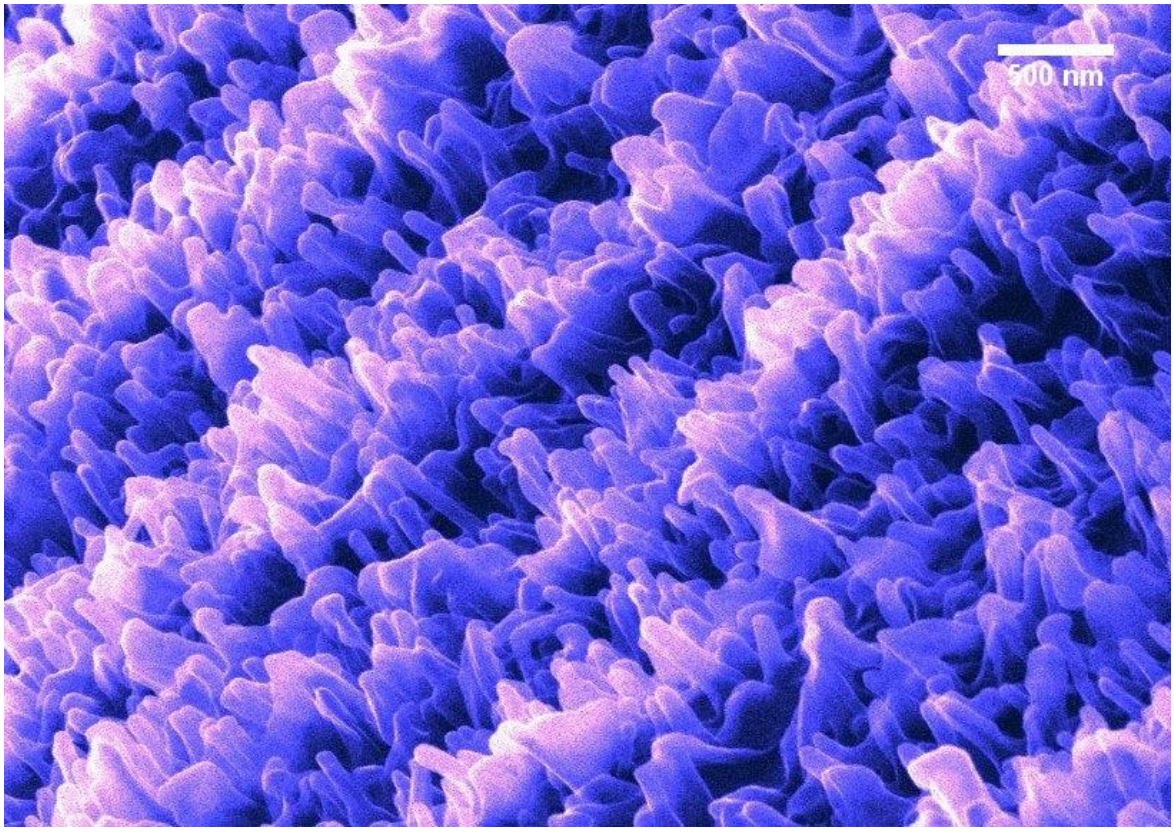
As the larva was too immature for specific identification in the photo it was suggested it should be reared through to an adult on blood worms. Unfortunately, we do not know what became of this individual and I never managed to find out where in North Wales the larva was found.

How are dragonflies wings antibacterial?

This amazing new property of the Odonata wing has been taken from the BDS Newsletter for 12th February 2018. The full article can be found at: https://pubs.acs.org/doi/pdf/10.1021/acsami.6b13666?mc_cid=fa2a766622&mc_eid=2a067a1efa

It has long been known that dragonfly wings possess antimicrobial properties, but the delicate nature of the wings means that, until now, it has been impossible for researchers to look closely enough at the micro-structure of the wings to understand why. New technology has allowed researchers at the Queensland University of Technology (QUT) to finally understand how dragonfly wings possess these properties. The team at QUT have now created huge microscopes, two metres high and two metres wide, which are able to take images of almost anything. Using this technology, the researchers have discovered that dragonfly wings are equipped with more than 10 billion tiny, finger-like structures, known as nanopillars. These nonopillars stick strongly to the surface of microbes, causing the bacteria to literally tear itself apart when trying to move.

It is hoped that the findings of the study can help guide the development of new bio-inspired materials by maximising the combination of biochemical and mechanical bactericidal effects.



Detail of nanopillars

First native damsel record for the year:


A female *Pyrrhosoma nymphula*, Rhuddlan Nature Reserve, 21st April 2018.
Photo Eifion Griffiths.

Allan

Dr Allan Brandon
North Wales Dragonfly Recorder
Bryn Heilyn, Rowen, Conwy LL32 8YT.