Fair Isle School Expeditionary Force takes in Sprittery Hole, 5th September 2025

Luca, Ander, Khalicee plus support staff of Jonathan, Carla and Nick took advantage of an afternoon of good weather to investigate who lives in Sprittery Hole

This shallow pool on Byerwall plateau normally dries out in summer but this year, strangely, it has held water to brimming point. During that time it has developed a very good an interesting fringe of vegetation, which we looked at first.

Fringing vegetation

Common Water Starwort *Callitriche stagnalis*

This was dominant along much of the edge. It is one of the commonest aquatic plants across the isle and one o the quickest to colonise new areas – for instance when ditches are dug out.

Common x Slender Spike-rush *Eleocharis palustris x uniglumis*

Taller vegetation, growing in the shallow northwest edge of the pool was largely this plant. It is one of Fair Isle's special plants because it defies description. In features it is n intermediate between Common Spike-rush and Slender Spike-rush. It is known from a few sites in Mainland Shetland along with both its parent species. Slender Spike-rush does not occur on Fair Isle but Common Spike-rush does – in the marshy area in front of the Plantation and the burn running away from Springfield outhouses. It is more sturdy and robust in all aspects and at first sight could be thought of as a completely different plant. This is the first time this intermediate has been recorded at Sprittery Hole. It is already known from pools and standing water at Easter Lother Water and amongst rocks at Buness and the Cletts o' da Rippack. Is it a hybrid or something else? It could be a scaled-down variety of Common Spike-rush adapted to the severe salt-laden winds in coastal conditions. On the other hand, Fair Isle has been isolated for so many millennia that speciation – the gradual progression away from one species into a genetically different offshoot – may be taking place. The Fair Isle Mouse and Fair Isle Wren are well known examples of this process.

Jointed Rush *Juncus articulatus*

The investigators pointed out a few plants among the spike-rush with diverging branches at their head. This was Jointed Rush. It is very common in wet places across the isle and is quite distinctive. The name 'jointed' comes from the internal structure of the stem which comprises a regular series of cross struts to strengthen the stem – which is very stiff. We did not need to slice the stem open to see this. The 'ribs' can be felt by rubbing the finger up and down the stem.

Ivy-leaved Water Crowfoot *Ranunuculus hederaceus*

In the south-east corner of the pool the children found a few Ivy-leaved Water Crowfoot in flower. This is a scarce plant generally in the UK, with a preference for still shallow water and muddy edges. In Shetland it is restricted to a few sites in south Mainland. In Fair Isle it has long been known in the water catchment which drains into the sea at Sompal. There are published records going back to 1894. Within the last twenty years it has spread into lower

sections of other catchments, reaching Sprittery Hole in 2013 with other sites, such as the Bird Observatory scrape following soon after. The seeds are too heavy to colonise these locations unconnected to the various drainage networks. In that respect the spread follows a pattern mirrored by a number of other species – e.g. the insect-eating sundew. The culpits may be humans and indeed a specific type of human – the birdwatcher! The adventurous birdwatcher wear modern boots specially designed for venturing across rough and wet terrain and these boots come with cleated soles. Seeds can easily become lodged between the narrow cleats and the person with the boots unwittingly distributes them into new places. Plants in new places is a relatively new thing here and there seems no more plausible explanation.

The fauna

Our investigators were encouraged to sweep through the fringing vegetation to find out what water invertebrates may lurk there. The results were spectacular. What appeared to be a peaceful and quiet stretch of water was actually teeming with life. The number rounded up in just a few sweeps of the vegetation was impressive. More impressive still was one of the finds.

Iberian Water Boatman *Corixa iberica*

There are six species of water boatman known from the isle and this is by far the largest (if we exclude humans). It was described new to science in 1980. Its entire world range extends from north-west Iberia along coastal north-west Scotland to the Faroe Islands and is of high conservation concern. It fits the category of post-glacial relic. There are a number of species which had their range divided during the last ice age when Spain and Portugal, less affected by the ice, became a refuge are for the western portion of the species. This gave the opportunity for differences to evolve (the word speciation pops up again). When eventually the ice retreated there was enough divergence between the two part-populations for them to be recognised as two separate species – though it took until 1980 to realise that they were different. The water boatman it had been split from is the Common Corixid *Corixa punctata*. They were separate enough to deter inter-breeding but there was another outcome: Common Corixid is a bully – i.e. it was dominant, pushing our Iberian Water Boatman to the very edge of Europe. Fortunately the Common Corixid does not appear to cope with the extreme climatic conditions of the extreme North Atlantic coastal edge.

Corixa iberica is found in most of our permanent pools and lochans, from Golden Water south to the Rippack and Utra quarry pools. Extreme conditions are probably here to stay so our special water boatman is safe from its Common Corixid cousin. However, there is a new enemy. In July 2009, during an investigation of Golden Water, we found the Backswimmer *Notonecta glauca*. This water bug was not known in northern Scotland but had been pushing northwards through the UK as a result of climate change. It is quick and very aggressive. We found that it actually attacked and killed the Iberian Water Boatmen and within a few years our water boatman population had fallen by 90%. Further studies, however, showed that the Iberian has learned to find safety within dense vegetation and that seems to be the case for Sprittery Hole where our investigators pulled out a couple of dozen very quickly. And the other good news is that not a single Backswimmer was found during our visit.

What else did we learn from our exploits? First, because Sprittery Hole is normally dry in summer, the Water Boatmen must have found the site by active exploratory flight around the isle. Second, no-one knew for sure that *Corixa iberica* was capable of flight. Now we know. Third, it also explains the explosive flight of a mystery insect from the water and glide across the pool that I had observed the week before – which was a primary reason for the exploration. Fourthly it tells us a lot about the current status of the Iberian Water Boatman – how well it is doing.

Other boatman and a beetle

There were a lot of smaller water boatmen in the nets. They included adults and young. Unlike butteflies and moths the early stages do not metamorphise – i.e. go through very different looking stages from caterpillar to adult. Instead theyt progress by growth and regular shedding of skin to allow for expansion. These younger indviduals are called nymphs. Here are two at different stages (‘instars’), taken by our young explorers at Sprittery Hole on Friday.

Artocarisa germari

Not all the smaller individuals were nymphs. There were a lot of adults of other species being caught. I only retained one which, with the help of the microscope, I identified as *Arctocarisa germari* – sorry, it does not seem to have an English name. It is common and widespread on Fair Isle but restricted to the moorland pools in the north. Here’s a picture.

The beetle

Beetles go through the metamorphis process so there was some uncertainty when a larval stage was intercepted. It was small and thin, a little like a worm with legs. But a close look showed that it had a head, thorax and abdomen; oh, and six legs. Classic features of an insect. It also had large jaws for such a small insect. This is a feature of predatory water beetles. This one probably preyed on the smaller water boatman nymphs. There were plenty there for it feast on.

Fungi

Before we headed for Sprittery Hole we found a small group of a mushroom with coppery brown mantle. That was Agaricus cupreobrunneus, the Copper Mushroom. Luca advised that it was good to eat.

Nick Riddiford, Schoolton