Josie McPherson: Alice McCosh Trust support for a research visit to Nouragues Nature Reserve with the University of Bern

I was awarded an Alice McCosh Trust grant for a research visit to Nouragues Nature Reserve in French Guiana with a research lab from the University of Bern. This was a great opportunity to get fieldwork experience within my PhD. and build my network within my field. My project involved studying individual-level behaviour in tadpoles in a free-ranging population.

Project Summary: To ensure survival and reproduction, animals, especially those lacking physical defences, rely on their behaviour to evade predators. Defensive behaviours differ between individuals, with large evolutionary and ecological consequences. Controlled laboratory studies have demonstrated a large influence of predators on both among- and within- individual differences in behaviour. However, the effects of predators on behaviour in real-world ecological settings remain uncertain. In this study, I will focus on a river island population of poison frogs *Allobates femoralis* in the Nouragues Nature Reserve, French Guiana. In this species, the males transport their tadpoles on their back to water bodies. On this island, these water bodies are buckets that have been artificially installed, but are naturally used by the frogs. Unusually, some of these buckets contain dragonfly larvae (tadpole predators) and some do not. For the assay period, I would place individual tadpoles in isolation tanks within their original bucket. This would mean I could perform repeated behavioural assays on individual tadpoles and compare the behaviour of those raised with predators to those raised without predators. This project represents a unique opportunity to investigate the impact of predator presence on behaviour in a free-ranging population of Neotropical poison frogs. Thus, providing novel insights into our understanding of predator-prey dynamics and the evolution of behaviour.

Project Progress: The field season was a great success. Although frog numbers were very low after a dry year, there were still tadpoles in the pools for behavioural assays. It was amazing to see poison frogs in their natural habitat and live among them. Since returning, I have completed video analysis and am moving on to the statistical analysis stage. I will keep you updated with the results.

I hugely enjoyed this experience, and am immensely grateful to the Alice McCosh Trust for their support of the project.

Pictures from my field trip: The behavioural assay set up (left) and the frog species *Allobates femoralis* in French Guiana (right)